

## **EL174. Office Partitions**

[EL174-2003/4/2011-10]



### **1. Scope**

The criteria shall apply to office fabricated partition, which is used to separate the office space.

### **2. Definitions**

#### 2.1

“Wood waste” refers to the wood waste as stipulated in “Wood waste classification and recycling standard” in accordance with the enforcement regulations of the Waste Management Law.

#### 2.2

“Fibrous wastes of herbaceous plants” is the cellulose raw material obtained from herbaceous plants, such as the byproduct of the green land (reed, silver grass, etc.), or product production and processing (chaff, residuals of bamboo, etc.).

#### 2.3

“Wood material” refers to a material molded using waste wood, such as particle boards, fiberboards, glued laminated timber, etc.

#### 2.4

“Particle board” refers to a wood product molded and pressed with an adhesive, and that is made out of small particles such as wood chips.

#### 2.5

“Fiberboard” refers to a wood product made out of vegetable fibers such as timber or chaff, and that is classified into Insulation Board (IB), Medium Density Fiberboard (MDF), or Hard Board (HB), depending on the density.

#### 2.6

“Waste wood” refer to the residual products generated by thinning out timbers, cutting out branches and processing timber, and to withdrawn timbers after use, excluding withered or

dead trees.

## 2.7

“Synthetic Resin Sheet” refers to synthetic resin decoration sheet or interior sheet used for surface decoration or finishing of the product.

## 2.8

“Surface decoration sheet” refers to a synthetic resin sheet with no adhesive layer, and that is used primarily as a finishing material for the surface of interior construction materials, furniture, electronic products, etc. However, sheets made from thermosetting plastics such as melamine resin are excluded from this definition.

## 2.9

“Interior Sheet” refers to synthetic resin adhesive sheet applied with adhesives on one side of the product that is mostly used as interior finishing material of buildings.

## 2.10

“Volatile organic compounds(VOCs)” refer to the organic compound in the fluid or solid state that constantly volatilize by a certain temperature and pressure in air.

## 2.11

“Volatile organic compounds emissions (VOCs emissions)” refers to the quantity of the VOC (Volatile Organic Compounds) per unit hour that is discharged to the outside while the product is running under the defined conditions.

Note: This standard tentatively defines them as VOCs from n-hexane to n-hexadecane on the chromatogram, which is created by the gas chromatograph equipped with the mass spectrometer

## **3. Certification Criteria**

### **3.1 Environmental Criteria**

#### **3.1.1**

With respect to resource consumption during the manufacturing process or the recyclability of the product at the stage of disposal, the product shall satisfy the relevant requirements.

#### 3.1.1.1

In the case of using wood material as the material of the product, the amount of waste timbers of the wood material used for the product shall satisfy the following requirements.

Items	Particle board	Fiberboard	Other Materials
Percentage of used waste timbers [weight%]	≥ 70	≥ 30	≥ 70

#### 3.1.1.2

In case of using structural body of synthetic resin for inside of the product panel, the usage rate of waste synthetic resin for the structural body of synthetic resin shall be more than 40 weight%.

#### 3.1.1.3

In case of using fabric on surface of the product, the fabric shall be polyester recycling PET(polyethylene terephthalate) bottles.

#### 3.1.1.4

In the case of using metal materials as the material of the product, the metal material shall consist of materials within 2 types of separable materials. However, metal parts used for assembly such as screws, bolts & nuts, and hinges shall be excluded.

### 3.1.2

With respect to discharging harmful elements during the stage of use, the product shall satisfy the following requirements.

#### 3.1.2.1

The synthetic resin sheet used on the surface of the product shall comply with the following requirements. However, in case of using the product certified by "Decorative synthetic resin sheets (EL252)" of Korean Eco-mark certification criteria, it is considered as satisfying this requirement.

a) With respect to the product with halogenated synthetic resin such as PVC, the content of vinyl chloride monomer shall be less than 1mg/kg.

b) As additives of resin, organo-tin compound (TBT, TPT), lead compound and cadmium compound shall not be used. Pb, Cd, Hg included in the product shall satisfy following criteria.

Item	Pb	Cd	Hg
Criteria [mg/kg]	≤ 50	≤ 0.5	≤ 0.5

c) As a Plasticizer, phthalate plasticizer with less than DEHP (di-(2-ethylhexyl) phthalate) of boiling point shall not be used.

### 3.1.2.2.

The paint used on the surface of the product shall comply with any one of the following with respect to harmful elements.

a) The sum of lead(Pb), cadmium(Cd), mercury(Hg), and hexavalent chromium(Cr<sup>6+</sup>) included in the paint shall be below the weight percentage{1000 mg/kg} of 0.1.

b) The harmful elements included in the non-volatilized amount of used paint shall comply with the following requirements.

Item	Pb	As	Cd	Sb	Ba	Cr	Hg	Se
Criteria [mg/kg]	≤ 90	≤ 25	≤ 75	≤ 60	≤ 500	≤ 60	≤ 60	≤ 500

c) The product shall use paint that is obtained the certification of environmental certificate of 'Paint (EL 241).'

### 3.1.2.3

Nickel emission of the metal part excluding screws, bolts, and hinges shall be below 0.5  $\mu\text{g}/\text{cm}^2 \cdot \text{week}$ .

### 3.1.3

With respect to the emission of pollutants during the stage of use, the wood or wooden material shall satisfy the following requirements.

#### 3.1.3.1

With respect to the formaldehyde emission from the wood or wooden material, the product shall satisfy one of the following. However, in case of using the product certified by

"Recycled wood products (EL723)" of Korean Eco-mark certification criteria, it is considered as satisfying this requirement.

a) According to Desiccators test, the emission of formaldehyde from wood or wooden materials shall be not more than 0.5mg/L.

b) According to Small Chamber test, the emission of formaldehyde after 7 days from wood or wooden materials shall be not more than 0.12mg/ m<sup>3</sup> · h.

#### 3.1.3.2

With respect to the VOCs emission of wooden materials (limited to particle boards and fiber boards), the product shall comply with one of the following.

a) All the surface of the wooden material constituting the product shall be packaged to prevent the emission of VOCs, and in particular, the remaining part excluding the girth of the wooden material shall be packaged with interior sheets which has obtained Eco-label certification of 'Decorative Synthetic Resin Sheet(EL252)' among certification standards by Eco-label products or thermosetting resin sheets such as melamine sheets. However, in case that some part of the surface is exposed for assembly using screws, it shall be excluded.

b) The emission of VOCs after 7 days shall be not more than 0.4mg/ m<sup>3</sup> · h and Toluene shall be not more than 0.080 mg/ m<sup>3</sup> · h.

c) The product shall use materials that have obtained environmental certification for 'wood forming product (EL723)' among the certification criteria by Eco-label products. However, case where the surface of the wood processed product which has obtained environmental certification is finished using separate material is excluded.

#### 3.1.3.3

Adhesives used in product shall satisfy the following requirements. However, in the case of using 'Adhesives (EL251)' among certification criteria by products with environmental mark which has attained Eco-label certification, the product shall be deemed as satisfying the requirements.

a) According to Small Chamber test, the emission of formaldehyde after 7 days from wood or wooden materials shall be not more than  $0.02\text{mg}/\text{m}^3 \cdot \text{h}$

b) The VOCs emission from adhesives shall satisfy one of the following requirements.

- VOCs used in product shall be 0.1 weight% or below.

Note) In this criteria, all the organic compounds with less than  $250^\circ\text{C}$  of boiling point shall temporarily defined as VOCs.

- According to Small chamber test, the emission of VOCs after 7 days shall be not more than  $0.4\text{mg}/\text{m}^3 \cdot \text{h}$  and Toluene shall be not more than  $0.080\text{ mg}/\text{m}^3 \cdot \text{h}$ .

#### 3.1.4

In the case of indicating the effect of final product on the indoor air, the emission after 7 days according to Full scale chamber test shall satisfy the following requirements.

Item	formaldehyde	VOCs
Criteria [ $\mu\text{g}/\text{m}^3$ ]	$\leq 30$	$\leq 250$

#### 3.1.5

With respect to life span of the product affecting the consumption of resources during its use stage, the product shall satisfy the following requirements.

##### 3.1.5.1

With respect to replaceable parts, such as glass, connecting pillars, finishing bars, upper covers, safety angles and height controlling props, parts with the same color and at least the same function shall be provided in order to replace broken parts.

##### 3.1.5.2

With respect to replaceable parts, standardized parts shall be used so that the parts can be retained for more than 5 years since the termination of the production, or can be mutually used with similar model parts produced in the same period of time.

### 3.2 Quality Criteria

#### 3.2.1

If Korean Industrial Standards are available as a national standard of the product in question,

it should satisfy the quality or performance criteria of the standard in question. However, items related to “3.1 Environmental Criteria” are excluded.

### 3.2.2

If no Korean Industrial Standards are available as a national standard of the product in question, it should satisfy the quality and performance criteria according to the following sequence. However, the items related to “3.1 Environmental Criteria” are excluded. Also, if the E-Mark Certification Criteria Setting Committee determines that the applying criteria are not reasonable considering the characteristic of the product, it should satisfy the standards that were modified by the committee (test item, test method, standards, etc.).

#### 3.2.2.1

National standards other than Korean Industrial Standards.

#### 3.2.2.2

Overseas national standards or international standards regarding the product quality in question.

#### 3.2.2.3

Standards of the organizations at home and abroad that are referred by the current E-mark target product and certification standard.

#### 3.2.2.4

A private standard that is recognized as higher than the national standard in the industry of the product in question.

## **3.3 Consumer Information**

### 3.3.1

Guides to product repair and replaceable parts supply

### 3.3.2

Product assembly manual

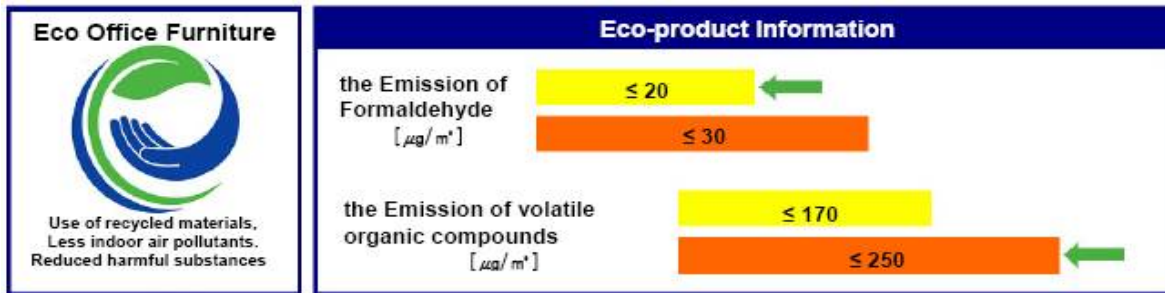
### 3.3.3

Indication of matters contributing to reasons (reduction of indoor air pollution, reduction of

harmful substances, recycling of available resources) for the certification of relevant product at the stage of consumption.

### 3.3.4

In the case of indicating the effect of final product on the indoor air, the following 'Detail information indication type' of eco-label designs shall be used.



## 4. Test Methods

Certification Criteria			Test and Verification Methods
Environmental Criteria	3.1.1		Verification of submitted documents
	3.1.2.1	a)	Test report by an accredited testing laboratory in accordance with KS M 0031(General rules for gas chromatographic analysis)
		b)	Verification of submitted documents and Test report by an accredited testing laboratory in accordance with KS M 0016(General rules for atomic absorption spectrochemical analysis), KS M 0032(General rules for ICP emission spectrochemical analysis)
		c)	Verification of submitted documents
	3.1.2	3.1.2.2 a)	The test results of the officially recognized agency according to the following test method. <ul style="list-style-type: none"> <li>▪ Pb : KS M ISO 3856-1 (Paints and varnishes - Determination of "soluble" metal content - Part 1: Determination of lead content - Flame atomic absorption spectrometric method and dithizone spectrophotometry)</li> <li>▪ Cd : KS M ISO 3856-4 (Paints and varnishes - Determination of "soluble" metal content - Part 4: Determination of cadmium content - Flame atomic absorption spectrometric method and electrolytic reaction analysis) <ul style="list-style-type: none"> <li>▪ Cr<sup>6+</sup> : KS M ISO 3856-5 (Paints and varnishes - Determination of "soluble" metal content: Determination of hexavalent chromium content of the liquid paint or the paint in powder – Diphenylcarbazide)</li> <li>▪ Hg : KS M ISO 3856-7 (Paints and varnishes - Determination of "soluble" metal content - Part 7:</li> </ul> </li> </ul>



			Determination of mercury content of the pigment portion of the paint and of the vanish portion of the paint - Non-flame atomic absorption spectrometric method)
		b)	Test report by an accredited testing laboratory in accordance with ISO 8124-3(Safety of toys – Part 3 : Elution of certain substances)
		c)	Verification of submitted documents.
	3.1.2.3		The test results of the officially recognized agency according to KS K 0853 (Test method for determination of nickel release from products intended to come into direct and prolonged contact with the skin: Alternate Exposure).
3.1.3	3.1.3.1	a)	Test report by an accredited testing laboratory in accordance to KS F 3200(Fiberboards) or equivalent testing method.
		b)	Test report by an accredited testing laboratory in accordance to the following test method or equivalent test method. <ul style="list-style-type: none"> <li>▪ Test method of indoor air quality process(pollutant emitting construction material test method) or</li> <li>▪ KS M ISO 16000-9[Indoor air -- Part 9: Determination of the emission of volatile organic compounds -- Emission test chamber method] and KS M ISO 16000-3(Indoor air – Part 3: determination of formaldehyde and other carbonyl compounds – Active sampling method)</li> </ul>
	3.1.3.2	a)	Verification of submitted documents and on-site investigation.
		b)	Test report by an accredited testing laboratory in accordance to the following method or equivalent test method <ul style="list-style-type: none"> <li>▪ Test method of indoor air quality process(pollutant emitting construction material test method) or</li> <li>▪ KS M ISO 16000-9(Indoor air -- Part 9: Determination of the emission of volatile organic compounds -- Emission test chamber method) &amp; KS M ISO 16000-6(Indoor air - Part 6: Determination of volatile organic compounds in indoor and chamber air by active sampling on TENAX TA sorbent, thermal desorption and gas chromatography using MSD/FID)</li> </ul>
		c)	Verification of submitted documents
	3.1.3.3	a)	<ul style="list-style-type: none"> <li>▪ Desiccator test: KS F 3217(starches adhesives for wallpaper) or the test report by and accredited testing laboratory in accordance with equivalent test method</li> <li>▪ Small Chamber test: Test report by an accredited testing laboratory in accordance with the following method or equivalent test method</li> </ul> -Equivalent test method or indoor air quality test method

		<p>(test method for building materials emitting pollutants)  - or ISO 16000-9 (Indoor air -- Part 9: Determination of the emission of volatile organic compounds -- emission test chamber method) and ISO 16000-3(Indoor air – Part 3: determination of formaldehyde and other carbonyl compounds – Active sampling method)</p>
		<p>b)</p> <ul style="list-style-type: none"> <li>▪ Test report by an accredited testing laboratory in accordance with ISO 11890-1[Paints and varnishes – Determination of volatile organic compound (VOC) content – Part 1 : Difference method]</li> <li>▪ Small Chamber test: Test report by an accredited testing laboratory in accordance with the following method or equivalent test method</li> </ul> <p>-Equivalent test method or indoor air quality test method (test method for building materials emitting pollutants)  -or ISO 16000-9 (Indoor air -- Part 9: Determination of the emission of volatile organic compounds -- emission test chamber method) and ISO 16000-6 (indoor air - Part 6: Determination of volatile organic compounds in indoor and chamber air through active sampling on TENAX TA sorbent, thermal desorption, and gas chromatography using MSD/FID)</p>
	3.1.4	GREENGUARD Certification Program GGTM.P066.R2 (method of measuring chemical emissions from various sources using dynamic environmental chambers) or test report by an accredited testing laboratory in accordance with this method
	3.1.5	Verification of submitted documents
Quality Criteria		Test report by the relevant accredited testing laboratory in accordance to the relevant standards or certificate of standards equivalent or higher.
Information for Consumers		Verification of submitted documents

## 4.1 General Matters

### 4.1.1

One test sample shall be required for each applied product. However, in case that more than one test is needed, it shall not be required.

### 4.1.2

Test samples shall be collected at random by a certification institute from products in market or those in storage at the production site. However, the test sample collection method for

verifying Environmental Criteria 3.1.3 follows ISO 16000-11(Indoor air -- Part 11: Determination of the emission of volatile organic compounds -- Sampling, storage of samples and preparation of test specimens) and the test sample collection method for verifying Environmental Criteria 3.1.4 follows GGTM. P066. R2 (Method for measuring chemical emissions from various sources using dynamic environmental chambers) by GREENGUARD Certification Program.

#### 4.1.3

The result of test shall be numerically set according to KS Q 5002 (Statistical interpretation method of the data – Part 1: Statistical description of the data).

### **5. Reasons for Certification**

"Reduction of indoor air pollutants (limited to relevant products), Reduction of harmful substances, Recycling of available resources (limited to relevant products)"

## **Common Criteria, Notice No. 2012-36, the Ministry of Environment**

1. Eco-label products must follow the following provisions with regard to the proper treatment of environmental pollution substances, such as air and water wastes and noxious chemical substances emitted in the process of manufacturing or service operation.

A. When first applying for certification, the product manufacturer should observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located for a period of one year prior to the date of application. Any case of violation of the penalty clause will be verified by confirming documents involved during a period of one year to the date of application. Regarding any violation not related to the penalty clause, confirmation will be made on the completion of appropriate measures.

B. A person who has received a certification of eco-labeling shall observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located during the period of certification. However, regarding any violation besides a penalty, confirmation will be made on the completion of appropriate measures.

2. As a general rule, information for consumers shall be indicated on the surface of the product in such a way not to be easily erased. However, in case that indication on the surface of the product is impossible or undesirable, it can be indicated on the appropriate part such as product packaging, product guidebook and user's manual that consumers can recognize. However, the service information should be indicated inside and outside of the place of service operation. In case that indication inside and outside of the place of service operation is impossible or undesirable, it can be indicated on the appropriate part such as an agreement, letter of delivery, letter of guarantee, and PR materials that consumers can recognize.

3. In order to establish fair trade and to protect consumer, the applicant for eco-label and the holder of eco-label license shall observe the Act on the Fairness of Indication and Advertisement with respect to the environmental aspects of the product.

4. For Various standards referred in the certification criteria by target product, the latest revised edition applies at the date of application, if not specified otherwise.

5. In applying the quality related criteria for each target product, if no standard is available that can be applied as the quality criteria, the president of Korea Environmental Industry & Technology Institute (KEITI) (hereafter referred to as "president of KEITI") may establish and operate the quality criteria for the product involved after review by a competent committee.