Eco-Label Certification Criteria

EL179

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EL179 : 2022

Auxiliary Parts for Furniture

환경부

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Foreword

These criteria are the criteria for eco-label certification revised through deliberation by **the Committee for Setting Certification Criteria** as per the procedures specified in **the Environmental Technology and Industry Support Act.**

Accordingly, EL179. Auxiliary Parts for Furniture【EL179-2016-134】has been revised to these criteria.

It should be noted that part of these criteria could be in violation of a patent right with the technical nature, application for patent after laying open the application, utility model right or application for utility model registration after laying open the application. The Minister of the Environment shall not be held accountable for checking matters related to this patent right with the technical nature, application for patent after laying open the application, utility model right or application for utility model registration after laying open the application.

This document is a translation of a Korean original. In case of dispute, the original document should be taken as authoritative.

Criteria for Eco-label Certification **EL179:2022**

Auxiliary Parts for Furniture

1 Scope

These criteria shall apply to standardized parts (hereinafter referred to as the “parts”) among auxiliary parts for furniture molded by using only synthetic resins or metals, or combining them, and prescribe methods to verify whether this product group conforms to the criteria for Eco-label certification; provided, however, that any product for which separate criteria for certification have been prescribed shall be excluded.

Note The criteria that shall apply to final products containing the parts are EL172, EL174, EL175, EL177 and EL483.

2 Normative References

The following documents, in whole or in part, are essential for application of these criteria. In the case of a reference with its publication date, only the cited edition shall apply. For a reference without its publication date, its latest edition (including all additions) shall apply.

EL172, Furniture

EL174, Office partition

EL175, Chair

EL177, Chairs and tables for educational institutions

EL241, Paint

EL252, Decorative synthetic resin sheets

EL483, Bed

KS C IEC 62321, Electric and Electronic Products - Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium PBBs and PBDEs)

KS I ISO 16000-3, Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method

KS I ISO 16000-6, Indoor air — Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA® sorbent, thermal desorption and gas chromatography using MS or MS/FID

KS I ISO 16000-9, Indoor air — Part 9: Determination of the emission of volatile organic compounds from building products and furnishing — Emission test chamber method

KS I ISO 16000-11, Indoor air — Part 11: Determination of the emission of volatile organic compounds — Sampling, storage of samples and preparation of test specimens

KS K 0853, Test method to determine nickel release from products that come into

contact with the skin: Alternate exposure

KS M 0016, General rules for atomic absorption spectrometry

KS M 0032, General rules for ICP emission spectrochemical analysis

KS M 0180, Test method for halogen (F, Cl, Br) and sulfur determined by ion chromatography after thermal oxidation hydrolysis

KS M 1072, Quantification of phthalate plasticizer among polymer materials

KS M 1998, Determination of the emission rate of formaldehyde and volatile organic compounds in building interior products

KS M 6672, Flexible polyurethane foam for cushioning

KS Q 5002, Statistical presentation of data

Detailed Criteria for Determination of Legal Logging of Imported Wood and Wood Products, Public Notification of the Korea Forest Service under the Act on the Sustainable Use of Timbers

Official Test Standards for Indoor Air Quality, Public Notification of the National Institute of Environmental Research under the Act on Environmental Examination and Inspection

Official Standards for Environmental Hazardous Factors, Public Notification of the National Institute of Environmental Research under the Act on Environmental Examination and Inspection

3 Terms and Definitions

For the purposes of these criteria, the following terms and definitions shall apply. Terms and definitions specified in EL172, EL174, EL175, EL177 and EL483 shall apply for others.

3.1 Parts

Auxiliary parts assembled into a final product for decoration or for a product to be properly functioned.

Note Like a table top, any auxiliary part which serves a main function of a final product or one that takes up a significant share of the final product shall be excluded.

Example The type of parts by material shall be as follows:

Classification	Type (Examples)
Synthetic resinous parts	Edge, door handle, caster, (elephant) door stop, cord cover, armrest, etc.
Metallic parts	Door handle, clothes hanging pole, clothes hanger stand, etc.
Woody parts	Armrest, etc.
Parts made of woody materials	Armrest, etc.
Parts made of combined materials	Caster, (elephant) door stop, etc.

3.2 Parts made of combined materials

Parts that consist of at least two different materials

4 Environmental Criteria

Items related to the environment taking into consideration the life-cycle stages of parts are as shown in **Table 1**.

Table 1 Items related to the environment by life-cycle state of par

Life-cycle stage	Items related to the environment	Environmental improvement effect
Raw material extraction	▪ Whether sustainable forest resources have been used	▪ Improvement in resource circulation
Manufacture	▪ Whether waste timber has been used	▪ Recycling of effective resources
	▪ Whether hazardous materials have been used	▪ Reduction in use of harmful substances
	▪ Whether halogenated synthetic resins have been used	▪ Reduction in use of harmful substances
	▪ Whether phthalate has been used	▪ Reduction in use of harmful substances
	▪ Whether flame retardants have been used	▪ Reduction in use of harmful substances
	▪ Whether foaming agents with an ODP of 0 and GWP of 3,000 or less have been used	▪ Reduction in emissions of ozone depleting substances
	▪ Whether halogenated organic compounds and alkylphenol ethoxylates (APEOs) have been used during the processes of cleaning/painting	▪ Reduction in use of harmful substances
Distribution/use/ consumption	▪ Whether nickel has been emitted	▪ Reduction in use of harmful substances
	▪ Emissions of VOCs, formaldehyde and toluene	▪ Reduction in use of harmful substances
	▪ Standardization of parts	▪ Improved recyclability
Disposal	▪ Whether reinforced steel plates, tin-plated and copper-plated steel sheet have been used	▪ Improved recyclability
Recycling	-	-

4.1 Standardization of parts

In regard to standardization of parts, the following criteria should be met:

Note Any product including casters or wheels that are manufactured in accordance with the Korean Industrial Standards shall be deemed conforming to this criterion.

4.1.1 Compatibility

Compatibility should be secured so that parts can be assembled into/attached to a final product produced by multiple manufacturers for it to function properly.

4.1.2 Management scheme

Dimensions, allowances and functions should be specified and managed in a systematic way, and parts should be manufactured/supplied under a consistent manufacturing method.

Note For a caster, a diameter and length of the fixed axis of the caster and a way to fix it, and a diameter of the caster shall be subject to specifications.

4.1.3 Connected areas

Unless there are special reasons including the need for safety, parts should be assembled into/attached to a final product by using normal tools.

4.2 Paints

Paints should be ones certified under EL241, or the sum of lead (Pb), cadmium (Cd), mercury (Hg) and hexavalent chrome (Cr^{6+}) contained in the paint should not exceed 1,000mg/kg. However, lead (Pb) should be 600mg/kg or less.

4.3 Synthetic resin materials

4.3.1 The content of lead (Pb) and cadmium (Cd) contained in a synthetic resin should meet **Table 2**.

Table 2 Criteria for content of harmful substances

Item	Item	Cadmium (Cd)
Criteria (mg/kg)	≤50	≤0.5

4.3.2 Phthalate should not be used as plasticizer, and the sum of content of phthalate contained in a product should be 0.1% or less in terms of mass fraction.

Note The sum of content of phthalate shall be the one of content of dibutylphthalate (DBP), butylbenzylphthalate (BBP), di-(2-ethylhexyl)phthalate (DEHP), di-(iso-nonyl)phthalate (DINP), di-n-octyl phthalate (DNOP), and di-(iso-decyl)phthalate (DIDP).

4.3.3 **P**olybrominated biphenyls (PBBs), polybromodiphenyl ethers (PBDEs), tetrabromobisphenol A (TBBPA), or hexabromocyclododecane (HBCD) should not be used as flame retardants; provided, however, that if the sum of PBBs, PBDEs, TBBPA and HBCD contents is 100 mg/kg or less, or the total bromine (Br) content is 30 mg/kg or less, it shall be considered to comply with this criterion.

4.3.4 For foaming parts, foaming agents whose ODP is 0 and GWP is less than 100 should be used. However, it is allowed to use materials whose ODP is 0 and GWP is 1000 or less until December 31, 2025.

4.3.5 Emissions of indoor air pollutants from parts made of flexible polyurethane foam should meet **Table 3**.

Table 3 Criteria for emissions of indoor air pollutants

Indoor air pollutants	Formaldehyde	VOCs	Toluene
Criteria ($mg/m^2 \cdot h$)	≤0.12	≤0.4	≤0.080

4.4 Metallic materials

4.4.1 Organic halogen compounds and alkylphenol ethoxylates (APEOs) should not be used during washing and painting processes.

4.4.2 In cases where they are likely to be in constant contact with the skin while in use,

nickel emissions should not exceed 0.5 μg/cm^2·week. However, it shall not apply to cases where a product is painted.

Note Hinges and locks, etc. shall be considered to have no likelihood of being in constant contact.

4.4.3 Inorganic/non-ferrous metallic reinforced steel plates (steel plate for enamel, clad steel sheet, etc.), tin plated and copper plated steel sheets should not be used.

4.5 Woody materials

4.5.1 Any wood materials (including hard woods and plywood) should be produced in conformity with the **Detailed Criteria for Determination of Legal Logging of Imported Wood and Wood Products**.

4.5.2 The amount of waste timber used by woody material should meet **Table 4**.

Table 4 Amounts of timber waste used by woody material

Type of woody materials	Particle board	Fiberboard	Other materials for molding
Amount of timber waste used [mass fraction (%)]	≥ 70	≥ 30	≥ 70

4.5.3 Emissions of indoor air pollutants from wood (including hard woods and plywood) and woody materials constituting parts should meet **Table 5**.

Note In cases where all the surface of woody materials and wood are finished with thermosetting synthetic resins or products certified under EL252, emissions of VOCs and toluene shall be considered conforming to this criterion.

Table 5 Criteria for emissions of indoor air pollutants

Indoor air pollutants	Formaldehyde	VOCs	Toluene
Criteria ($mg/m^2 \cdot h$)	≤0.12	≤0.4	≤0.080
Note For the test method for emissions of formaldehyde, the desiccator method is allowed. In this case, the emission should not exceed 0.5 mg/L.			

5 Quality Criteria

5.1 Flexible polyurethane foam

The apparent density and compression set of parts for flexible polyurethane foam (at least 50mm in thickness) should meet **Table 6**.

Table 6 Quality and performance of parts for flexible polyurethane foam

Test Item	Apparent density (kg/m^3)	Compression set (%)
Criteria	≥16	≤13

5.2 Quality and performance

Note The criteria for quality and performance of parts shall apply only to the items applicable to the parts among the criteria for final assembled products. However, parts that have no applicable quality criteria shall be excluded.

5.2.1 If there are Korean Industrial Standards available, a product should meet the criteria for quality and performance set forth in the applicable standards; provided, however, that items related to **Section 4** (Environmental Criteria) shall be excluded from the criteria for quality and performance.

5.2.2 If there are no Korean Industrial Standards available under **5.1.1**, such product should meet the criteria for quality and performance in order of priority as follows; provided, however, that items related to **Section 4** (Environmental Criteria) shall be excluded from the criteria for quality and performance.

a) National standards other than Korea Industrial Standards;

b) Standards in foreign countries or international standards in regard to quality of the applicable product;

c) Collective standards in accordance with Article 27 of the Industrial Standardization Act

5.2.3 In cases where **5.2.1** or **5.2.2** cannot apply, an applicant may present criteria for quality and performance according to collective standards, etc. considered to be equivalent to or higher than the national standards by the industry of the applicable product and file a request for such criteria to be applied. The **Certification Deliberation Committee** should conduct deliberation upon request of an applicant, taking into consideration whether the application of the presented standards and criteria for performance is reasonable; provided, however, that items related to **Section 4** (Environmental Criteria) shall be excluded from the criteria for quality and performance.

6 Consumer Information

6.1 Reasons for certification

Reasons for certification of a product including contributions the product makes to reducing environmental impacts shall be stated on a catalogue, etc.

6.2 Information on product use

The applicable type of a final product, how to assemble it and precautions should be stated.

7 Verification Method

Verification methods by item of the certification criteria are as shown in **Table 7**.

Table 7 Verification methods by item of certification criteria

Item of certification criteria			Verification method
Environmental Criteria	**4.1**		Checking submitted documents
	4.2		Checking submitted documents or a test certificate issued by an accredited institution pursuant to **8.2**
	4.3	**4.3.1**	A test certificate issued by an accredited institution pursuant to **8.3**
		4.3.2	Checking submitted documents and a test certificate issued by an accredited institution pursuant to **8.4**
		4.3.3	Checking submitted documents and a test certificate issued by an accredited institution pursuant to **8.5**
		4.3.4	Checking submitted documents
		4.3.5	A test certificate issued by an accredited institution pursuant to **8.6** or testing method equivalent thereto
	4.4	**4.4.1**	Checking submitted documents
		4.4.2	Checking submitted documents and a test certificate issued by an accredited institution pursuant to **8.7** or other test methods equivalent thereto
		4.4.3	Checking submitted documents
	4.5	**4.5.1**	Checking submitted documents[a]
		4.5.2	Checking submitted documents and on-site inspection
		4.5.3	Checking submitted documents or a test certificate issued by an accredited institution pursuant to **8.6, 8.8** or other test methods equivalent thereto
Quality Criteria	**5.1**		A test certificate issued by an accredited institution pursuant to **8.9** or a certificate pursuant to criteria equivalent thereto or higher
	5.2		A test certificate issued by an accredited institution pursuant to the applicable standards or a certificate pursuant to criteria equivalent thereto or higher
Consumer Information			Checking submitted documents

[a] Examples of documents to be submitted are a statement of use of raw material, a certificate of notification of import of timber (timber products) under the Act on the Sustainable Use of Timbers (conforming), a certificate of forest management and an authorization of logging, etc.

8 Testing Method

8.1 General

a) In principle, the number of test samples shall be one (1) piece for each product for which application has been filed; provided, however, that if more than one test sample is necessary, more samples may be added.

b) The test sample shall be randomly collected among products that either have been already marketed or have been on standby for release by an institution to which the affairs of granting the Eco-label certification are entrusted; provided, however, that

methods to collect and store the sample for verification of **4.3.5** and **4.5.3** shall comply with KS I ISO 16000-11.

c) For verification of **5.2**, the institution entrusted with certification shall select representative samples among parts made of the same material and with the same function and determine the final product to which such parts can be applied.

d) The test results shall be rounded by adding 1 or more digits to the last digit of the individual standard value pursuant to KS Q 5002; provided, however, that if the testing method prescribes the number of digits to be rounded, it shall apply.

Note A test certificate should specify matters related to rounding.

8.2 Paints

Tests shall be conducted in accordance with the **Criteria for Process Test of Environmental Hazardous Factors**.

8.3 Content of lead (Pb) and cadmium (Cd)

Tests shall be carried out in accordance with KS M 0016, KS M 0032 or KS C IEC 62321.

8.4 Content of phthalate

Tests shall be carried out in accordance with KS M 1991.

8.5 Content of flame retardants

8.5.1 PBBs, PBDEs

Tests shall be carried out in accordance with KS C IEC 62321.

8.5.2 TBBPA, HBCD

Tests shall be carried out in accordance with KS M 1072.

8.5.3 Total bromine (Br)

Tests shall be carried out in accordance with KS M 0180.

8.6 Emissions of VOCs, formaldehyde and toluene (small chamber method)

Tests shall be conducted by one of the following testing methods:

a) ES 02131.1 the **Criteria for Process Test of Indoor Air Quality** and KS I ISO 16000-6;

b) KS I ISO 16000-3, KS I ISO 16000-6, KS I ISO 16000-9

8.7 Nickel emissions

Tests shall be carried out in accordance with KS K 0853.

8.8 Formaldehyde emissions (desiccator method)

Tests shall be carried out in accordance with KS M 1998.

8.9 Flexible polyurethane foam

Tests shall be carried out in accordance with KS M 6672.

9 Reasons for Certification

Category of Reason for Certification	Improvement in Resource Circulation[a]	Saving Energy[b]	Reduction in Environmental Pollution on Earth[c]	Reduction in Regional Environmental Pollution[d]	Reduction in Harmful Substances[e]	Reduction in Pollution of Living Environment[f]	Reduction in Noise and Vibration[g]
Relevance	●				●	○[h]	

[a] Saving resources and water, improvement of recyclability, recycling effective resources, etc.

[b] Saving energy, use of renewable energy, etc.

[c] Reduction in greenhouse gas emissions, reduction in emissions of ozone layer-depleting substances, etc.

[d] Reduction in emissions of air pollutants, water pollutants and soil pollutant, reduction in waste generation, better biodegradability, etc.

[e] Reduction in use of harmful substances, reduction in exposure to harmful substances, etc.

[f] Reduction in emissions of indoor air pollutants, reduction in light pollution, etc.

[g] Reduction in noise and vibration

[h] Only the products subject to **4.3.5** and **4.5.3**.

[**Common Criteria**]

1. Those who have received the Eco-label certification should comply with the environmental regulation standards during the certification period. However, even if the environmental regulation standards have been violated, they shall be considered to be complied with, if the details of such violation, measures to correct the violation and measures to prevent recurrence including each of the following are submitted to the President of the Korea Environmental Industry and Technology Institute (hereinafter referred to as "the KEITI President") and such measures are taken within one month from the date of such violation.

A. A list of the environmental regulation standards applicable in the area where the certification holder is located

B. A system to implement the environmental regulation standards (including an organization chart describing roles and responsibilities)

C. Regulations on retaining archived records and documents related to implementation of the environmental regulation standards.

2. With regard to labeling for "Consumer Information" specified in the certification criteria for each product, the following should be complied with.

A. "Consumer Information" related to the product shall be stated on the surface of the product. However, in cases where the KEITI President acknowledges that it is not possible or desirable to state it on the surface of the product, Consumer Information may be stated on other appropriate area(s) where it can be easily legible by consumers, such as the product package, product guide or user manuals;

B. "Consumer Information" related to service should be displayed on the inside/outside of the premises of such service provider. However, in the case where the KEITI President acknowledges that it is not possible or desirable to display it on the inside/outside of the premises, Consumer Information may be displayed on other appropriate area(s) where it can be easily legible by consumers such as contracts, delivery statements, warranties, or promotion materials.

3. Those who intend to obtain, or has obtained, Eco-label certification should comply with the Act on Fair Labeling and Advertising to ensure fair transactions and protect consumers, and should not place any unfair labeling or advertising regarding environmental aspects of the product pursuant to Article 16-10 of the Act. In addition, those who have obtained Eco-label certification should manage the Eco-labeled product with a unique trade (model) name not to mislead consumers.

4. In cases where there are restrictions related to raw materials to be used or places for a product to be used, etc. in accordance with other laws or regulations or where there are regulations requiring a product to be certified prior

to its production, etc., all the applicable certification criteria and regulations for each product should be complied with.

5. With regard to the various specifications cited in the certification criteria for each product, the latest versions of the standards at the time of application for certification shall apply unless otherwise noted. If the applicable regulatory criteria become stricter than the certification criteria of each product due to a revision of relevant laws and regulations, the stricter regulatory criteria shall tentatively apply, and if the criteria are abolished, the most recent version before the revision shall tentatively apply until the applicable certification criteria are revised.
6. When it is judged that the application of quality-related standards in accordance with the certification criteria of each product is not appropriate, the KEITI President may set and implement quality criteria for the applicable product.

[**Verification Methods In Accordance With Certification Criteria**]

1. The test certificate in accordance with the prescribed testing methods shall mean a test report issued by one of the agencies listed below. However, when a person applying for the Eco-label certification wants to use a test/inspection institution not included in the list below for verification, such verification should be conducted in the presence of an expert designated by the KEITI President.
   A. KEITI in accordance with the Korea Environmental Industry and Technology Institute Act;
   B. Test/inspection institutions recognized by the accreditation system for test/inspection institutions in accordance with Article 23 of the Framework Act on National Standards (e.g. test/inspection institutions accredited by KOLAS);
   C. Test/inspection institutions designated and recognized by the head of a central administrative agency in accordance with relevant laws;
   D. Foreign test/inspection institutions in conformity to the ISO/IEC 17025;
   E. Test/inspection institutions recognized by the KEITI President when it is difficult to conduct tests in one of the institutions specified from A to D.
2. If the KEITI president requests data related to the test, the test/inspection institution that issued a test certificate in accordance with Clause 1 herein should grant the request unless there is a specific reason for not doing so. If the institution rejects the request of KEITI President without a justifiable reason, the test/inspection institution may face restrictions on testing and inspection work to be entrusted.
3. Checking the submitted documents is to verify whether a product meets the certification criteria with test reports, raw material supply/production statements, product-related certificates, user manuals, guidebook, or the product provided by a person who intends to receive the Eco-label certification in order to prove that the product complies with the applicable certification criteria. In the case of a service, it may include performance data, evidentiary documents and on-site photos.
4. If a person who has already received the certification seeks to obtain additional certification for a model using the same raw materials, parts or materials as those of the certified product, the previous verification results may be used for the applicable raw materials, parts or materials; provided, however, that the issuance of the test report pursuant to Clause 1 should be within 12 months from the date of application for certification.
5. In the case of certification in accordance with 2 of Clause 3 of Article 4, the KEITI President shall randomly select one sample from models in the product line and verify it representatively.
6. In the case of certification in accordance with 3 of Clause 3 of Article 4, the KEITI

President shall randomly select one sample from models in the product line and verify it representatively. However, in cases where some of environmental and quality information varies from model to model and affects the verification results, each model shall be separately verified according to the environmental or quality criteria.

7. If the certification criteria have the rate of waste material use set for each product, circular resources recognized in accordance with the Framework Act on Resources Circulation shall be considered as waste materials.

8. Notwithstanding Clause 3, if it is difficult to conduct verification with submitted documents only or it is necessary for follow-up management pursuant to Article 28(2) of the Act, verification shall be conducted through tests equivalent to those in Clause 1. In this case, if test methods are not prescribed, the test method of the standards may be applied in the following order:

   A. Korean Industrial Standards;

   B. National standards other than the Korean Industrial Standards;

   C. International standards;

   D. Collective standards in accordance with the Industrial Standardization Act;

   E. Test method commonly used internationally which is recognized by the KEITI President.


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