EL256. Decorative Synthetic Leather

[EL256-2008/2/2012-36]

1. Scope

These criteria shall apply to products of decorative synthetic leather made from synthetic resin materials, and which are used mainly for the finish of walls, ceilings, and upholstery of an interior room. However, products used for bags and footwear shall be excluded.

2. Definitions

2.1

“Synthetic leather” refers to a substitute manufactured similarly to the organization of genuine leather by infiltrating polymer resins into a fibrous layer.

2.2

“ODP (Ozone Depletion Potential)” refers to the proportion of the influence of ozone layer depleting material when that of CFC-11 is 1.

2.3

“GWP (Global Warming Potential)” refers to the proportion of the influence of global warming influencing materials when that of CO_2 is 1.

Note) The criteria adopt GWP with a duration of 100 years in accordance with the Second Assessment Report: Climate Change (1995) of the IPCC (the Intergovernmental Panel on Climate Change).

2.4.

“Azo dyestuffs” refer to general rules for dyestuff of the azo group (-N=N-) as a chromophore and to compounds decomposable into the following amines:

CAS No.	Amine	CAS No.	Amine
92-67-1	4-aminodiphenyl	119-93-7	3,3'-dimethylbenzidine
92-87-5	benzidine	838-88-0	3,3'-dimethyl-4,4'-diaminodiphenylmethane
95-69-2	4-chloro-o-toluidine	120-71-8	p-cresidine
91-59-8	2-naphthylamine	101-14-4	4,4'-methylene-bis-(2-chloroanilene)

97-56-3	o-aminoazotoluene	101-80-4	4,4'-oxideaniline
99-55-8	2-amino-4-nitrotoluene	139-65-1	4,4'-thiodianiline
106-47-8	p-chroloaniline	95-53-4	o-toluidine
615-05-4	2,4-diaminoanisole	95-80-7	2,4-toluylenediamine
101-77-9	4,4'-diaminodiphenylmethane	137-17-7	2,4,5-trimethylaniline
91-94-1	3,3‘-dichlorobenzidine	90-04-0	o-anisidine
119-90-4	3,3‘-dimethoxybenzidine	60-09-3	4-aminoazobenzene

2.5.

“VOCs (volatile organic compounds)” refer to liquid or solid organic compounds which volatilizes constantly by certain established temperature and pressure levels in the air.

2.6.

“VOCs emissions” refer to the density of VOCs per unit of time, measured under the prescribed conditions.

Note) In these criteria, VOCs from n-nucleic acid to n-hexadecane in the chromatogram is temporarily defined by gas chromatograph with mass spectrometer.

2.7

“Phthalate plasticizer” is used to apply flexibility to synthetic resins like PVC or used as a solvent of liquefied chemical products. This compound can be classified into 1- and 2-benzenedicarboxylic acid.

3. Certification Criteria

3.1 Environmental Criteria

3.1.1

With respect to the use of chemical materials in manufacturing process, the product shall satisfy the following criteria.

3.1.1.1 The product that uses chlorinated resin like PVC should comply with the following standard.

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

b) As plasticizers, phthalate-typed plasticizer should not be used, and the sum of phthalate-typed plasticizer content contained in the product) should be less than 0.1 wt%.

Note) Calculate the sum of the each DBP(dibutylphthalate), BBP(butylbenzylphthalate), DEHP (di-(2-ethylhexyl) phthalate), DINP(di-(iso-nonyl) phthalate, DNOP(di-n-octyl phthalate), DIDP (di-(iso-decyl)phthalate)

3.1.1.2

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

Harmful Element	Pb	Cd	Hg
Content [mg/kg]	≤50	≤0.5	≤0.5

3.1.1.3

Phthalate plasticizers of which boiling point is less than di-(2-ethylhexyl) phthalate(DEHP) should not be used for the plasticizer of the resin.

3.1.1.4

Dyestuffs and pigments in which carcinogenic dyestuffs, lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr^{6+}), or Nickel (Ni) are used for raw materials shall not be used.

Note) For these criteria, the following dyestuffs are temporarily defined as carcinogenic dyestuffs.

CAS No.	Name of Material	CAS No.	Name of Material
003761-53-3	C.I. Acid Red 26	000573-58-0	C.I. Direct Red 28
000569-61-9	C.I. Basic Red 9	002475-45-8	C.I. Disperse Blue 1
000632-99-5	C.I. Basic Violet 14	000082-28-0	C.I. Disperse Orange 11
001937-37-7	C.I. Direct Black 38	002832-40-8	C.I. Disperse Yellow 3
002602-46-2	C.I. Direct Blue 6		

3.1.1.5

With respect to using flame retardants in the product, PBBs (polybrominated biphenyls), PBDEs (polybromodiphenyl ethers), short-chain chlorinated paraffin, or C=10-13 with a chlorine density of 50% or more than 50% shall not be used.

3.1.1.6

When blowing agents are used, the ODP and GWP of the agents shall, respectively, be equal to zero and 3,000 or below 3,000.

3.1.2

With respect to hazardous materials released when the product is being used, the product shall satisfy the following requirements.

3.1.2.1.

The hazardous materials of the product shall satisfy the following criteria.

Item		Criteria
Formaldehyde		≤ 30
Chlorinated Phenols	PCP (pentachlorophenol)	≤ 0.05
	TeCP(2,3,5,6-tetrachlorophenol)	≤ 0.05
Organotatar Compounds [mg/kg] note1)		≤ 1.0
Azo Dyestuffs [mg/kg] note2)		Each at 30 or below 30
DMF (dimethylformamide) [mg/kg] note3)		≤ 10
PFCs(Perfluorinated compounds)	PFOS [μg/m^2]	≤ 1.0
	PFOA [mg/kg]	≤ 0.1
	8:2 FTOH [mg/kg]	≤ 0.1

Note1) In these criteria, only compounds defined in accordance with KS K 0737 (Test method for the determination of selected organotin compounds in textiles) shall be temporarily defined as organotatar compounds.

Note2) This is applied only where dyeing is conducted.

Note3) This shall be applied only to polyurethane synthetic leather.

3.1.2.2

In regard to emission of pollutant in consideration of effect on the indoor air quality, the emission of VOCs, toluene and formaldehyde after 7 days has passed should satisfy the following requirements.

Section	VOCs	Toluene	Formaldehyde
Criteria [mg/㎡ h]	≤0.40	≤0.080	≤0.05

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 Information for Consumers: Labeling of the details contributing to authentication reason by the related product in the consumption step of the product (hazardous substances, indoor air pollution reduction)

3.3.1
Labeling of those matters in which a product contributes to the certification reasons, (Less harmful substances, less indoor air pollution), during the phase of use.

3.3.2.
Indications on the relevant information where products do not using chlorine synthetic resin, such as PVC, and not using phthalates plasticizer as the plasticizer of resin
Example) “PVC not used”, “Phthalates plasticizer not used’, etc.

3.3.3.
Indications of relevant information in case a polyurethane resin synthetic leather not using organic solvent, such as DMF, is used during product manufacture. (However, in the case of DMF, it shall be applied only in cases where the content, in accordance with environmental standard A(1), is 30mg/kg or below 30mg/kg.)
Example) “Organic solvent including DMF not used”, etc.

4. Test Methods

Certification criterion item			Test method and verification method
Environmental Criteria	3.1.1	3.1.1.1	KS K 0730 (Test method for residual vinyl chloride monomer (VCM) content of poly(vinyl chloride) fiber and resins)
		3.1.1.2	Check the documents to submit and the test results of the officially recognized agency according to KS M 1991(Method of extracting phthalate plasticizer from synthetic resins).
		3.1.1.3 ~3.1.1.6	Verification of submitted documents
	3.1.2	3.1.2.1	The following test methods or equivalent test reports conducted by an accredited testing laboratory: ▪ Formaldehyde: KS K ISO 14184-1 [Textiles－Determination of formaldehyde－Part 1:

			Free and hydrolized formaldehyde (water extraction method)] ▪ Chlorinated Phenols (PCP, TeCP): KS K 0733 (measurement method for the determination of pentachlorophenol content in textiles and leathers) ▪ Organotatar Compounds: KS K 0737 (measurement method for the determination of selected organotin compounds in textiles) ▪ Azo Dyestuffs: KS K 0147 (Arylamines test method of dyestuffs and dyed goods) ▪ DMF: KS M 0031 (general rules for gas chromatograph analysis) ▪ PFOS, PFOA: The test results of the officially recognized agency according to the “Asterisk 2. EM201. Test method for the determination of PFOS and PFOA in articles.” ▪ 8:2 FTOH : KS M 0033 (General rules for analytical methods in high performance liquid chromatography)
		3.1.2.2	The following test methods or equivalent test reports conducted by an accredited testing laboratory: ▪ Indoor air quality process test standard (Test method for pollutant-emission construction materials); ▪ or KS M ISO 16000-9 (Indoor air – Part 9: Measurement for the emission of VOCs – Emission test chamber); KS M ISO 16000-6 (Indoor air – Part 6: Extraction of active samples from adsorbent TENAX TA, and VOC measurement in indoor and chamber air according to gas chromatography using a thermal desorber and MSD/FID; KS M ISO 16000-3 (Indoor air – Part 3: Determination of formaldehyde and other carbonyl compounds – active sampling method); and KS M ISO 16000-11 (Indoor air - Part 11: Determination of the emission of volatile organic compounds – Sampling, storage of samples, and the preparation of test specimens)

Quality Criteria	Test reports of authorized institutions pursuant to the standards involved or certificates for the same or higher criteria
Consumer information	Verification of submitted documents

4.1 General Matters

4.1.1

Make it a principle to take one test sample per product under application. However, where more than one test is required, additional products shall be provided for testing.

4.1.2

Environmental labeling certification institutions shall conduct random sampling of test samples among the products commercially available or kept in production locations.

4.1.3

Test result 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

"Less harmful substances, Less indoor air pollution"

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.