

EL247. Assembly-type Floor Heating System

[EL247-2003/4/2013-23]



1. Scope

The criteria shall apply to the product which is constructed by dry process without using finish mortar among the assembly-type floor heating in which indoor floor is heated by circulating warm water.

2. Definition

2.1

“Ozone Depletion Potential (ODP)” refers to the value expressing the relative effect of a substance on the ozone layer when CFC-11 is represented as 1.

2.2

“Global Warming Potential (GWP)” refers to the value expressing the relative effect of a substance on global warming when CO₂ is represented as 1.

Note) In this criteria, the GWP for a duration of 100 years as outlined in the Fourth Assessment Report: Climate Change (2007) of the IPCC (Intergovernmental Panel on Climate Change) shall be applied.

3. Certification Criteria

3.1 Environmental Criteria

3.1.1

With respect to the use of chemical substances and the emission of materials destructing ozone layers, the product shall satisfy the following requirements.

3.1.1.1

Organotin compounds (TBT, TPT), lead compounds, and cadmium compounds shall not be used as additives for resin used in the product. In addition, lead (Pb), cadmium (Cd) and mercury (Hg) contained in the product shall satisfy the following requirements.

Item	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)
Contained Amount [mg/kg]	≤ 50	≤ 0.5	≤ 0.5

3.1.1.2

In case that foaming products are used as raw materials constituting synthetic resin floor materials, a substance with a zero ODP and less than 3 000 GWP shall be used as foaming agent.

3.1.1.3

The following substances shall not be used as flame retardants. In addition, the sum of each content of polybrominated biphenyls (PBBs), polybromodiphenyl ethers (PBDEs), tetrabromobisphenol A (TBBPA) and hexabromocyclododecane (HBCD) shall be less than 100 mg/kg.

CAS No.	Substance	CAS No.	Substance
59536-65-1	PBBs: polybrominated biphenyles	25637-99-4	HBCD: hexabromocyclododecane
126-72-7	TRIS: tri-(2,3- dibromopropyl)-phosphate	85535-84-8	short chain chlorinated paraffins (C10 ~ C13)
545-55-1	TEPA: tris-(aziridinyl)- phosphinoxide)	115-96-8	TCEP: tris(2-chloroethyl)- phosphate
32534-81-9 32536-52-0 1163-19-5	PBDEs: polybromodiphenyl ethers	79-94-7	TBBPA: tetrabromobisphenolA

Note) If bromine (Br) content is less than 30 mg/kg, it shall be regarded as satisfying this requirement.

3.1.2

With respect to the consumption of energy during the use stage, the upper heat emission capability and deviation of surface temperature of a product shall satisfy the following requirements.

Item	Capability of Upper Heat Emission [kJ/m ² ·sec]		Deviation of Surface Temperature [°C]
Standard	Metal radiating pipes	≥ 0.20	≤ 5
	Synthetic resin radiating pipes	≥ 0.10	

3.1.3

With respect to the life span of product affecting the consumption of resource during the use stage, the following criteria shall be satisfied:

3.1.3.1

Stainless steel (STS 304, STS 316), copper and copper alloy or synthetic resin (excluding chlorine-class synthetic resin) shall be used in order not to create corrosion or scale on the part touching warm water.

3.1.3.2

The structure of the product shall allow for easy replacement and re-assembling of individual units and main components.

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 Eco-label 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, reference values, 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 Eco-label 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

Indication on the items that the product contributes to the reasons for certification (reduction of building waste materials, energy-saving, reduction of harmful substances, available resource recycling) during its consumption stage

4. Test Methods

Certification Criteria			Test and Verification Methods
Envir. Criteria	3.1.1	3.1.1.1	Verification of submitted documents and test report by an accredited testing laboratory in accordance with the test methods of KS M 0016(General rule of analysis method of atomic absorption) and KS M 0032(General rule of analysis method of high frequency inductively coupled plasma emission spectrum)
		3.1.1.2	Verification of submitted documents
		3.1.1.3	Verification of submitted documents and a test record by an accredited testing laboratory in accordance with the following or equivalent test methods <ul style="list-style-type: none"> ▪ PBBs, PBDEs: KS C IEC 62321(Electric and Electronic Products – Measurement of Six Regulated Substances (Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs, PBDEs) Content) ▪ TBBPA, HBCD: KS M 1072 (Quantitative Analysis of Brominated Flame Retardants among High Molecular Materials) ▪ Total Bromine (Br): KS M 0180 (Halogen (F, Cl, Br) and Sulfur Test Methods by Ion Chromatographic Detection After Oxidation Pyrohydrolytic
	3.1.2		Test report by an accredited testing laboratory in accordance with the following test methods <ul style="list-style-type: none"> ▪ Upper heat emission capability: KS B 8025 (Floor Panels for Hot-Water Heating) ▪ Deviation of surface temperature: KS B 8025 (Floor panel for hot water heating)
	3.2.3		Verification of submitted documents
Quality Criteria			Test report by the relevant accredited testing laboratory or certificate of equivalent
Consumer Information			Verification of submitted documents

4.1 General Matters

4.1.1

One test sample shall be required for each applied product. Only if more than one test sample is needed, the former requirement may not be met.

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.

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 construction waste, energy-saving, reduced harmful substances”