

# **EL746. Aggregate and Fine Powder**

[EL746-2008/3/2008-213]



## **1. Scope**

The scope shall apply to the civil engineering-construction materials made by using inorganic waste materials including waste lime waste plaster-waste casting sand-waste lime powder that is generated in the manufacturing process of waste ceramic materials - such as inorganic civil engineering construction waste material, waste glass, waste ceramic waste tile - incineration residue, inorganic sludge and other products. However, the product for which separate certification criteria are specified shall be excluded.

## **2. Definitions**

### 2.1

"Inorganic construction waste material" refers to the inorganic waste material (excluding metal) among wastes generated in construction site from the construction start point to the completion.

### 2.2

"Construction" refers to the facilities installation, maintenance, repair work, site developing work, machinery facility and other structure installation or break up.

### 2.3

"Incineration residue" refers to combustion ash and fly ash such as coal ash-briquette generated after the combustion of fuel.

### 2.4

"Inorganic sludge" refers to what separates powder-type inorganic substance released with waste water after cutting-abrasive works or what incinerates lake-sewage sludge or makes it melting slag.

### 2.5

"Waste material" refers to the 'post-consumer waste material' and 'pre-consumer waste material.'

2.6

“Post-consumer waste material” refers to the material that finishes its purpose of use and is let out after passing through normal circulation stages.

2.7

“Pre-consumer waste material” refers to the unused material as a product that is generated in a form of scrap in the manufacturing process. However, the material that is generated in the manufacturing process and then used again as raw material in the same process is excluded.

2.8

“Usage rate of waste material” refers to the weight percentage of waste material amount among the raw materials that are used as products.

### **3. Certification Criteria**

#### **3.1 Environmental Criteria**

3.1.1

With respect to the resource consumption in the manufacturing stage, the waste material usage rate shall satisfy the following criteria by type of the used waste material.

3.1.1.1

Inorganic waste materials shall be used at a 100% rate as raw materials of aggregate and fine powder.

3.1.1.2

In cases where the drifting sorting process is applied to remove the foreign substance, a recycling system that recovers used water and reuse shall be installed and operated.

3.1.1.3

In cases where the wind force sorting process is applied to remove the foreign substance, a system preventing arsenic acid shall be installed and operated.

3.1.2

With respect to the harmful elements emission in the disposal stage, in case of the

product made using designated waste materials as recycling raw materials, harmful elements including heavy metal shall satisfy the criteria specified in the table 1. However, in case of firing processing product, 6+ chrome, cyanide, organic phosphorus, trichloroethylene and tetrachloroethylene shall be excluded.

<Table 1> Standard Amount of Harmful Elements

Item	Standard Amount [mg/L]	Item	Standard Amount [mg/L]
Cadmium(Cd)	< 0.3	Hexavalent chromium (Cr <sup>6+</sup> )	< 1.5
Lead(Pb)	< 3	Cyanide(CN <sup>-</sup> )	< 1
Copper(Cu)	< 3	Organic Phosphorus	< 1
Arsenic(As)	< 1.5	Trichloroethylene	< 0.3
Mercury(Hg)	< 0.005	Tetrachloroethylene	< 0.1

### 3.2 Quality Criteria

#### 3.2.1

Aggregate generated from construction wastes shall comply with the quality criteria of the circular aggregate by use in accordance with Article 35, 'Act of recycling promotion for the construction waste.'

#### 3.2.2

Aggregate generated from the inorganic wastes (excluding inorganic construction wastes) shall comply with the following quality criteria by use.

Type	Quality Criteria
Aggregate for concrete	Absolute surface dried specific gravity, absorption rate, stability, abrasion rate 0.08mm sieve passing rate, alkali reaction and standing type of KS F 2527(fractured aggregate for concrete)
Fractured aggregate for road paving	Specific gravity, absorption rate, abrasion rate and particle size of KS F 2525(fractured aggregate for road)
Aggregate for asphalt concrete pavement	Specific gravity, absorption rate, abrasion rate and particle size of KS F 2357(aggregate for bituminous pavement mixture)
Recycled aggregate for asphalt concrete	KS F 2572(recycled aggregate for asphalt concrete)

#### 3.2.3

Fine powder shall satisfy the quality criteria of KS F 3501(filling material for bituminous

pavement) and KS L 5405(fly ash) by its use.

#### 3.2.4

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

#### 3.2.5

If no Korean Industrial Standards are available as a national standard of the product in question, it should satisfy the quality and performance standard 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.).

##### 3.2.5.1

National standards other than Korean Industrial Standards.

##### 3.2.5.2

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

##### 3.2.5.3

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

##### 3.2.5.4

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

### **3.3 Consumer information:** Inorganic waste material use (%)

## **4. Test Methods**

Certification Criteria	Test and Verification Method
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Environment Criteria	3.1.1	Verification of submitted documents and actual location
	3.1.2	Test report by an accredited testing laboratory in accordance with test methods of processing waste material (test of eluting heavy metal)
Quality Criteria	3.2.1	Test report conducted by an accredited testing laboratory in accordance with the quality criteria of the circular aggregate according to Article 35, "Act of recycling promotion for construction waste", or a test report conducted by an accredited testing laboratory in accordance with an equivalent certificate and waste materials process testing method (heavy metal elution test)
	3.2.2	Test report conducted by an accredited testing laboratory in accordance with KS F 2527 (fractured aggregate for concrete), KS F 2525 (fractured aggregate for roads), KS F 2357 (aggregate for bituminous pavement mixture), KS F 2572 (recycled aggregate for asphalt concrete) or equivalent certificate
	3.2.3	Test report conducted by an accredited testing laboratory in accordance with KS F 3501 (filling material for bituminous pavement), KS L 5405 (fly ash) or equivalent certificate
	3.2.4~3.2.5	Test report by an accredited testing laboratory in accordance with the relevant criteria
Consumer Information		Verification of submitted documents

#### 4.1 General Matters

##### 4.1.1

One test sample shall be required for each applied product. However, 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. However, details on the method of gathering samples of aggregate shall be in accordance with KS F 2501(methods of gathering samples of aggregate)

##### 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. Reason for Certification**

“Recycling of available resources”

## **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.