

**Partial Revision for Certification Criteria of Eco Mark Product Category
No.131 “Products for Civil Engineering Version 1.3”**

Regarding to the Eco Mark Product Category No.131 “Products for Civil Engineering Version1.3” (Established: January 15, 2005), the following minor revisions are made. (==text is deleted, and the underlined text is added.)

< Omission >

[P3]

4 . Ceritifcation Criteria

4-1 . Environmental criteria

< Omission >

[P4]

B . Plastics

- (3) Plastic additives shall follow positive lists specified by the industry’s own standards. As for products approved by the Japan Fire Retardant Association as ‘flame retardant goods’ or ‘flame retardant agents’, excluding PBB (polybromobiphenyl), PBDE (polybromodiphenylether), or short-chain chlorinated paraffin (with 10-13 chain Carbon atoms and a 50% or higher chlorine content) shall be permitted for use. In addition, (Pb)-based chemical compounds, cadmium (Cd)-based chemical compounds, tributyl tin compound (TBT), triphenyl tin compound (TPT), dibutyl tin compound (DBT), diphenyl tin compound (DFT), and monophenyl tin compound (MFT) shall not be added as prescribed constituents. This item is not applicable for “I-1. Traffic sign boards”.
- (4) Plastic shall not be added polymers that contain halogens and organic halogenides as prescribed constituents. But this item is not applicable for “L. Sewage/waterworks materials” and “N-7. Water bars”.

< Omission >

[P5]

C . Aggregates

- (15) The percentage of recycled aggregates produced from crushed chunks of concrete from demolished concrete architectural structures shall be 100% by mass of the entire product mass. The percentage of vitrified material

aggregates such as non-industrial wastes and sewage sludge shall be 100% by mass of the entire product mass. The percentage of slag aggregates, the respective blast furnace slag, ferro-nickel slag, copper slag and electric furnace oxidizing slag shall be 100% by mass of the entire product mass.

(16) The production stage of the product shall give consideration to the quantity of new resources used, energy consumption and CO₂ emissions.

< Omission >

[P6]

D . Cement

(19) The products shall use “recycled materials” that are defined above, and contain the materials listed in Table 1.

(20) Raw materials (including fuels and mixing materials) used in the process of producing 1 ton of the product shall contain 0.4 ton or more of the above-mentioned recycled materials in total. As for recycled materials containing moisture, including sludge, the raw materials shall be calculated using mass values when received.

Eco-cement shall include 0.5 ton or more (in dry weight) of the waste, such as municipal-waste incineration ash, per 1 ton of the product.

Table 1 Recycled materials usable for making cement

Recycled materials
Blast furnace slag
Coal ash
By-product lime
Sludge
Non-steel slag
Steelmaking slag
Combustion residues (excluding coal ash), soot, dust
Coal refuse
Foundry sand
Waste tires
Recycled oil
Waste oils
Waste clay
Waste plastics
Wood chips
RDF
RPD
Other non-industrial wastes and industrial wastes designated under the “Law Concerning Waste Disposal <u>and</u> Cleansing,” shall be appropriate as cement constituents, fuels or mixing materials

< Omission >

[P7]

F . Concrete products

(25) Concrete products shall conform to either a. or b. as follows.

a. As for products using permeable concrete, the coefficient of permeability shall be:

1×10^{-2} cm/sec or higher

b. The “Recycled materials” given in Table 2 shall be used at the standard mixture rate or higher. The combination of recycled materials shall be either aggregates only or aggregates and cement.

Table 2 Recycled materials usable for concrete products

Recycled material	Standard mixture rate
Coarse aggregates in conformity with Criteria C (15) to C (18) for applicable ‘aggregates’	50% by mass of coarse aggregates, provided it is 50% by mass of fine aggregates for vitrified material aggregates
Cement in conformity with Criteria D (19) to D (23) (20) for the applicable ‘cement’, and concrete admixture in conformity with Criteria E (24) for the applicable ‘concrete admixture’.	(Weight of recycled materials/weight of cement + weight of admixture) $\times 100 \geq 50$

< Omission >

[P8]

Table 3 Recycled materials usable for sub-base materials and asphalt mixture

Recycled materials
Modified asphalt
Asphalt-concrete block, concrete block
Quarrying and ceramic industry waste soil
Micro-silica sand obtained during the water washing of silica sand (mica powder)
Steel slag
Foundry sand
Ceramic waste
Coal ash
Waste Recycled plastic
Shells
Glass cullet
Construction sludge
Paper-manufacturing sludge

H . Landscaping/revegetation materials

(36) As for the products, the total mass of “recycled materials” given in Table 4 shall be 70% or more of the entire product mass. Products in which concrete and other materials are combined for use, the ratio of recycled materials to the product mass excluding the concrete portion shall be 70% or more. As for products composed of concrete only, or a portion of concrete, they shall use the standard mixture rates for “recycled materials” given in Table 5 or a higher standard. The combination of recycled materials shall be either aggregates only or cement and admixture~~aggregates and cement.~~

As for products whose purpose of use is terminated after a certain period and that may be left in the environment, only Category A recycled materials shall be used.

When using Category C recycled materials, high-stability treatment, burning or vitrification shall be conducted in the stage of pre-treatment of raw materials or production process, based on the “Guideline of construction sludge recycling” (compiled and written by the Advanced Construction Technology Center, October 1999).

< Omission >

[P9]

**Table 4 Recycled materials usable for landscaping/revegetation materials
(excluding concrete portions)**

Recycled material			
Category A	Reused/unused wood		
	Waste plant fibers (Rice straw, palms, moss, etc.)		
	Waste paper		
Category B	Coarse aggregates in conformity with Criteria C (15) to C (18) for applicable 'aggregates'		
	Cements in conformity with Criteria D (19) to D (23) (20) for applicable 'cement'		
	Fiber	Unused fibers	
		Recycled fibers	Recovered fibers
			Recycled polymer fibers [50]
			Recycled chemical fibers [50]
	Unused cloth, recycled cloth		
	Mining/quarrying industry wastes	Quarrying and ceramic industry waste soil, micro-silica sand obtained during the water washing of silica sand (mica powder)	
	Metal industry wastes	Steel slag, foundry sand, ceramic waste, copper slag, ferro-nickel slag, electric furnace slag	
	Other industrial type wastes	Coal ash, waste recycled plastics [50], shells, waste recycled rubber, glass cullet, gypsum (including desulfurized gypsum), glass wool, rock wool	
Non-industrial wastes and vitrified materials in sewage sludge			
Category C	Living/self-generating sludge	Waterworks sludge, sludge from the bottom of lakes	
	Industrial sludge	Paper-manufacturing sludge, aluminum sludge, galvanizing sludge, polishing sludge	
	Construction sludge		

Note 1: The percentage mass of wooden parts means the proportional mass of the product or each material in an air dried state*¹ or at the point of constant weight*² at a temperature of 20±2°C and humidity of 65±5%.

*¹: Indicates leaving in a well-ventilated room for seven days or more.

*²: Change is less than 0.1% when the weight is measured every 24 hours.

Note 2: As for ~~waste~~ recycled plastics and recycled fiber, combined use of recycled polymers and virgin polymers shall be permitted. Products using post-consumer materials as raw materials shall be permitted if the proportional mass of plastics composed of post-consumer materials conforms to the requirement in [] given in the table.

Table 5 Recycled materials usable for concrete portions

Recycled material	Standard mixture rate
Criteria C (15) to C (18) for applicable 'aggregates'	50% by mass of the coarse aggregates used, provided that 50% by mass of fine aggregates are used as 'vitrified material aggregates'
Criteria D (19) to D (23) (20) for applicable 'cement', and concrete admixture in conformity with Criteria E (24) for the applicable 'concrete admixture'.	(Weight of recycled materials/weight of cement + weight of admixture) ×100 ≥ 50

I . Traffic signs/traffic lane lines

I-1 . Traffic sign boards

(42) The board parts of traffic signs, which are composed of a board and a reflective sheet, shall be reused when traffic sign boards are removed.

~~(43) Materials for reflective sheets shall conform to the requirements of 4 1 2, B. (3) and (4).~~

(43) The plastic materials used for reflective sheets shall not contain the following prescribed constituents; lead (Pb)-based chemical compounds, cadmium (Cd)-based chemical compounds, tributyl tin compound (TBT), triphenyl tin compound (TPT), dibutyl tin compound (DBT), diphenyl tin compound (DFT), and monophenyl tin compound (MFT).

(44) The materials shall be clearly known and designed to allow separation/sorting. Replacement of the parts shall be easily carried out.

I-2 . Traffic sign materials

(45) As for products, the total mass of "recycled materials" given in Table 6 shall be 70% or more of the entire product mass, and at the same time, each material product shall conform to the standard mixture rate given in Table 6.

Table 6 Recycled materials usable for traffic sign materials

Recycled material	Standard mixture rate (as % by mass)	
Aggregates	Coarse aggregates in conformity with Criteria C (15) to C (18) for applicable 'aggregates'/total coarse aggregates $\times 100 \geq 50$; provided that those using vitrified materials shall be as follows: Vitrified material aggregates in conformity with the applicable 'aggregates'/total fine aggregates $\times 100 \geq 50$	
Criteria D (19) to (23) (20) for applicable 'cement', and concrete admixture in conformity with Criteria E (24) for the applicable 'concrete admixture'.	(Weight of recycled materials/weight of cement + weight of admixture) $\times 100 \geq 50$	
Cement	Cement in conformity with Criteria D (19) to D (23) (20) for applicable 'cement'/total cements $\times 100 \geq 50$	
Recycled plastics	Road rivets	Recycled plastics/total plastics $\times 100 = 100$
	Other traffic sign materials	Recycled plastics/total plastics $\times 100 \geq 70$ [60]
Glass cullet	Glass cullet/total glass materials $\times 100 = 100$	
Reused/unused wood	(Forest thinnings and small-diameter logs + waste wood + less useful wood)/total wooden materials $\times 100 = 100$	

Note 1: The mass percentage of the wooden portion means the proportional mass of the product or each material in an air dried state*1 or at the point of constant weight*2 at a temperature of 20±2°C and humidity of 65±5%.

*1: Indicates leaving in a well-ventilated room for seven days or more.

*2: Change is less than 0.1% when the weight is measured every 24 hours.

Note 2: As for recycled plastics, combined use of recycled polymers and virgin polymers shall be permitted. Products using post-consumer materials as raw materials shall be permitted if the proportional mass of plastics composed of post-consumer materials conforms to the requirement in [] given in the table.

< Omission >

[P12]

J . Materials for temporary structures

(58) As for products, the proportional mixture of “recycled materials” given in Table 7 shall be 70% or more of the entire product mass. However, the proportional mixture of recycled plastic of plastic mold shall be 50% or more (25% or more for the product which contains post-consumer materials as polymers) of the entire product mass.

The proportional mixture of recycled materials shall be 20% or more of the entire product mass for a temporary road mat and a road mat which contains recycled rubber as main material.

At the same time, each material product shall conform to the standard mixture rate given in Table 7.

Table 7 Recycled materials usable for materials for temporary structures

Recycled material	Standard mixture rate (% by weight)
Aggregate	Coarse aggregates in conformity with Criteria C (15) to C (18) for applicable 'aggregates'/total coarse aggregates $\times 100 \geq 50$; provided that those using vitrified materials shall be as follows: Vitrified material aggregates in conformity with applicable 'aggregates'/total fine aggregates $\times 100 \geq 50$
Criteria D (19) to (22) (20) for applicable 'cement', and concrete admixture in conformity with Criteria E (24) for the applicable 'concrete admixture'.	(Weight of recycled materials/weight of cement + weight of admixture) $\times 100 \geq 50$
Cement	Cement in conformity with Criteria D (19) to D (22) (20) for the applicable 'cement'/total cement $\times 100 \geq 50$
Recycled plastics	Recycled plastics/total plastics $\times 100 \geq 70$ 50 60 25
Glass cullet	Glass cullet/total glass materials $\times 100 = 100$
Reused/unused wood	(Forest thinnings and small-diameter logs + waste wood + less useful wood)/total wooden materials $\times 100 = 100$
Waste paper pulp	Waste paper pulp/pulp $\times 100 = 100$ [Waste paper pulp/pulp $\times 100 \geq 95$ (Mixture rate for mold without using release agent)]
Recycled rubber	Recycled rubber/total of rubber $\times 100 = 100$ [50]

Note 1: The percentage mass of wooden parts means the proportional mass of the product or each material in an air dried state*1 or at the point of constant weight*2 at a temperature of 20±2°C and humidity of 65±5%.

*1: Indicates leaving in a well-ventilated room for seven days or more.

*2: Change is less than 0.1% when the weight is measured every 24 hours.

Note 2: As for recycled plastics, the combined use of recycled polymers and virgin polymers shall be permitted. Products using post-consumer materials as raw materials shall be permitted if the proportional mass of the plastics composed of post-consumer materials conforms to the requirement in [] given in the table.

Note 3: As for recycled rubber, products using post-consumer materials as raw materials shall be permitted if the proportional mass of the recycled rubber composed of post-consumer materials conforms to the requirement in [] given in the table.

< Omission >

[P13]

K . Road materials

K-1 . Road lighting

(64) For low-grade insect-attracting road lighting, high pressure sodium lamps shall be used as light sources and compared with lighting facilities using mercury lamps, and electricity consumption shall be reduced by ~~35~~45% or more.

(65) As for balustrade lighting, road lighting equipment shall be mounted in an elevated position on the wall balustrades of a bridge, or on sound insulation walls, to reduce light leakage to areas beyond the roadside.

< Omission >

[P14]

K-3 . Other road materials

(68) As for products, the proportional mixture of “recycled materials” given in Table 8 shall be 50% or more of the entire product mass. However, the product which contains recycled rubber as main materials, the proportional mixture of recycled materials shall be 20% or more of the entire product mass.

Table 8 Recycled materials usable for road materials

Recycled material	Standard mixture rate (% by mass)
Aggregates	Coarse aggregates in conformity with Criteria C (15) to C (18) for applicable ‘aggregates’/total coarse aggregates $\times 100 \geq 50$; provided that those using vitrified materials shall be as follows: Vitrified material aggregates in conformity with applicable ‘aggregates’/total fine aggregates $\times 100 \geq 50$
Criteria D (19) to (23) (20) for applicable ‘cement’, and concrete admixture in conformity with Criteria E (24) for the applicable ‘concrete admixture’.	(Weight of recycled materials/weight of cement + weight of admixture) $\times 100 \geq 50$
Cement	Cement in conformity with Criteria D (19) to D (23) (20) for applicable ‘cement’/total cement $\times 100 \geq 50$
Recycled plastics	Recycled plastics/total plastics $\times 100 \geq 70$ [60]
Glass cullet	Glass cullet/total glass materials $\times 100 = 100$
Reused/unused wood	(Forest thinnings and small-diameter logs + waste wood + less useful wood)/total wooden materials
Recycled rubber	Recycled rubber/total of rubber $\times 100 \geq 30$

Note 1: The percentage mass of the wooden parts means the proportional mass of the product or each material in an air dried state*1 or at the point of constant weight*2 at a temperature of 20±2°C and humidity of 65±5%.

*1: Indicates leaving in a well-ventilated room for seven days or more.

*2: Change is less than 0.1% when the weight is measured every 24 hours.

Note 2: As for recycled plastics, combined use of recycled polymers and virgin polymers shall be permitted. Products using post-consumer materials as raw materials shall be permitted if the proportional mass of plastics composed of post-consumer materials conforms to the requirement in [] given in the table.

< Omission >

[P15]

L . Sewage/waterworks materials

(74) As for products, the proportional mixture of “recycled materials” given in Table 9 shall be 70% or more of the entire product mass, and at the same time, each material product shall conform to the standard mixture rate given in Table 9.

Table 9 Recycled materials usable for sewage/waterworks materials

Recycled material	Standard mixture rate (% by mass)
Aggregates	Coarse aggregates in conformity with Criteria C (15) to C (18) for applicable ‘aggregates’/total coarse aggregates $\times 100 \geq 50$; provided that those using vitrified materials shall be as follows: Vitrified material aggregates in conformity with applicable ‘aggregates’/total fine aggregates $\times 100 \geq 50$
Criteria D (19) to (23) (20) for applicable ‘cement’, and concrete admixture in conformity with Criteria E (24) for the applicable ‘concrete admixture’.	(Weight of recycled materials/weight of cement + weight of admixture) $\times 100 \geq 50$
Cement	Cement in conformity with Criteria D (19) to D (23) (20) for applicable ‘cement’/total cement $\times 100 \geq 50$
Recycled hard vinyl chloride	Recycled vinyl chloride/total hard vinyl chloride $\times 100 \geq 50$
Recycled plastics other than recycled hard vinyl chloride	Recycled plastics/total plastics $\times 100 \geq 70$ [60]

Note 1: As for recycled plastics, the combined use of recycled polymers and virgin polymers shall be permitted. Products using post-consumer materials as raw materials shall be permitted if the proportional mass of plastics composed of post-consumer materials conforms to the requirement in [] given in the table.

< Omission >

[P17]

N-2 . Revegetation base materials

(94) As for products, the proportional mixture of “recycled materials” given in Table 11 shall be 70% or more of the entire product mass. In cases where Category B recycled materials are used, high-stability treatment, burning or vitrification shall be conducted in the stage of pre-treatment of raw materials or production process, based on the “Guideline of construction sludge recycling” (compiled and written by the Advanced Construction Technology Center, October 1999).

Table 11 Recycled materials usable for revegetation base materials

Recycled material		
Category A	Mining/quarrying industry wastes	Quarrying and ceramic industry waste soil, micro-silica sand obtained during the water washing of silica sand (mica powder)
	Metal industry wastes	Steel slag, foundry sand, ceramic waste, copper slag, ferro-nickel slag, electric furnace slag
	Other industrial wastes	Coal ash, shells, glass cullet, gypsum (including desulfurized gypsum), rock wool, waste recycled rubber, reused/unused wood
	Non-industrial wastes and vitrified materials in sewage sludge	
Category B	Living/self-generating sludge	Waterworks sludge, sludge from the bottom of lakes
	Industrial sludge	Paper-manufacturing sludge, aluminum sludge, galvanizing sludge, polishing sludge
	Construction sludge	

Note: Recycled materials which can be used for revegetation base materials are limited to the materials in this table.

< Omission >

[P19]

N-9 . Foundation improvement materials

(106) The mixture rate of the coal ash, gypsum (including desulfurized gypsum), and steelmaking slag for foundation improvement materials in the product shall be 60% or more of the entire product mass.

(107) As for harmful substances contained in the product, the product shall conform to the requirements of those substances including cadmium, lead, hexavalent chromium, arsenic, and total mercury, among the specific harmful substances given in Attachment 3, which are provided in the detailed enforcement regulations (Ministry of the Environment Ordinance No. 29, December 26, 2002) of the Soil Pollution Control Law.

If recycled products of gypsum boards, which were discarded along with dismantling buildings, are proved to include asbestos, arsenic and cadmium, the products shall be separated and eliminated. In addition, the products shall be proved not to include asbestos by a result of either qualitative test; “Analysis for Content Rate of Asbestos in Building Materials, Kiankahatsu No. 0622001, June 22, 2005” or “JIS A1481 Determination of Asbestos in Building Material Products”.

As for concrete information of waste gypsum boards which shall be eliminated, refer to the “Asbestos Contained in Gypsum Board Products”

(Gypsum Board Industry Association) and “Proper Treatment of Harmful Substances along with Dismantling Buildings” (The Committee for the Promotion of Recycling of Construction By-Product).

For products which were recycled from waste gypsum boards only discarded at manufacturing plants of gypsum boards processed products or construction sites for new building, the analysis of asbestos is not required.

< Omission >

[P21]

G . Pavement materials

(119) The amount of used rubber added to antifreezing pavement materials containing rubber particles shall conform to the traffic volume categories established by the Japan Automobile Tire Manufacturers Association, Inc. and the Japan Tire Recycle Association.

(120) Quality of recycled sub-base materials and recycled asphalt mixture shall conform to ~~the standards of the guideline for plant recycled pavement technology~~ the standards in the materials at the end of “Manual for Pavement Recycling (issued by the Japan Road Association, 2004”).

< Omission >

[P35]

N-9 . Foundation improvement materials

(93) For Criteria 4-1-3.(106), a raw materials certificate issued by the supplier shall be attached. Especially, as for products to reuse dismantling-line gypsum boards, certificates of test results conducted by third party testing body or public institution shall be submitted.

< Omission >

[P40]

Attachment 1 Applicable Products

Product name	
Wood	(1) Wooden tiling/blocks
Steel construction materials	(2) Permeable steel sheet piles (3) Low displacement steel piles

Concrete materials	Aggregates	Vitrified material aggregates	(4) Fine aggregates for concrete using vitrified materials such as non-industrial waste and sewage sludge
		Slag aggregates	(5) JIS A5011-1 Blast furnace slag aggregates (6) JIS A5011-2 Ferro-nickel slag aggregates (7) JIS A5011-3 Copper slag aggregates (8) JIS A5011-4 Electric furnace oxidation slag aggregates
		Recycled aggregates	(9) Recycled aggregates
	Cement	(10) JIS R5210 Portland cement (11) JIS R5211 Blast Furnace Slag Cement (12) JIS R5213 Fly Ash Cement (13) JIS R5214 Eco-cement	
	Admixture	(14) JIS A 6206 Powder dust of blast furnace slag (15) JIS A 6201 Fly ash (16) JIS A 6207 Silica fume	
Concrete product		(17) JIS A5371 Precast plain concrete products, Category II (18) JIS A5372 Precast ferroconcrete products, <u>Category I and Category II</u> (Retaining walls, reinforcing clayey walls, box culverts, etc.) (19) JIS A5373 Precast prestressed concrete products (20) JIS A5409 Prefabricated ferroconcrete fence components (21) JIS A5412 Prestressed concrete double-T slabs (22) JIS A6511 Hollow prestressed concrete panels	
Pavement materials			(23) Rubber pavement materials (24) Rubber particle-containing antifreezing pavement materials (25) Recycled sub-base materials and recycled asphalt mixture (26) Vegetation mat (27) Vegetation sheet (28) Vegetation net (29) Vegetation net with fertilizer bags attached (30) Planters (excluding small planters for household use) (31) Indication panels (Name plate is applicable for "Commodity") (32) Mulching protectors for trees (33) Waterside revegetation materials (34) Tree protector materials/lawn protector materials (35) Artificial trees (36) Sprinklers (irrigation pipes, etc.) (37) Prefabricated glass greenhouses (38) Pergolas (39) Arbors (40) Drinking fountains (41) Shelters (42) Trellises (43) Artificial lawns (44) Street materials (design fences) (45) Rootstock control materials (weed control mats, excavation materials) (46) Artificial landscaping materials (47) Protective materials (elasticity protecting material)

Landscaping/revegetation materials	(48) Buffer stops (49) Fake stones
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T r a f f i c sign/traffic lane lines	Traffic signboards	(50) Traffic signboards
	Traffic sign materials	(51) Road rivets (52) Delineators (snow poles) (53) Delineators (54) Traffic signposts/road reflection mirrors (55) Traffic signboards/guardrail protection materials
	Traffic lane lines	(56) Glass beads for road marking paint
Materials for temporary structures	Scaffolding, landing bridges, etc.	(57) Lining board (58) <u>Temporary road mat</u> (59) <u>Road mat</u>
	Molds	(60) Round/rectangular molds (61) Decorative form
Road materials	Road lighting	(62) Low-grade insect-trap road lighting (63) Balustrade lighting

< Omission >

[P45]

Attachment 3 Forestry Certification Provided Based on Definition of Terms

Certification criteria	<ul style="list-style-type: none"> - While balancing economical, ecological, and social benefits, the criteria shall comply with Agenda 21 and Statement of Principles on Forests, and observe related international agreements and conventions. - Including solid requirements, the criteria shall promote sustainable forests. - Recognized both domestically and internationally, the criteria shall be recommended as part of the process opened to participation by ecological, economical, and social stakeholders.
Certification system	- Certification systems shall have high transparency, maintain nation-wide or international reliability, and can verify requirements.
Certification body	- With fairness and high reliability, certification organizations and groups shall be able to verify that requirements are satisfied, convey the results, and able to execute requirements effectively.

< Omission >

[P46]

Attachment 4 Environmental information indication

Applicable product	Environmental information indication	Indication
Permeable steel sheet piles within steel construction materials	(Indication below the Mark) Unrestricted groundwater flow	 <p>地下水循環を可能にする</p> <p>Unrestricted groundwater flow</p>
Planting fins for steel sheet pile bank revegetation within steel construction materials	(Indication below the Mark) Steel sheet pile bank revegetation device	 <p>鋼矢板護岸の緑化</p> <p>Steel sheet pile bank revegetation device</p>
Low displacement steel piles within steel construction materials	(Indication below the Mark) Lower displacement steel piles	 <p>排土量が少ない鋼管杭</p> <p>Lower displacement steel piles</p>
<u>Permeable concretes within concrete products</u>	(Indication below the mark) <u>Permeable concretes</u> <u>*Only for the product to choose “a.” in Certification Criteria (25)</u>	 <p>透水性コンクリート</p> <p><u>Permeable concretes</u></p>
Traffic signboards within Traffic signs/traffic lane lines	(Indication below the Mark) Reusable traffic signboards	 <p>道沿標識板の再利用</p> <p>Reusable traffic signboards</p>

<p>Low-grade insect-trap road lighting within road materials</p>	<p>(Indication below the Mark) Insect repelling road lighting</p>	 <p>Insect repelling road lighting</p>
<p>Balustrade lighting within road materials</p>	<p>(Indication below the Mark) Reducing leakage of lighting</p>	 <p>Reducing leakage of lighting</p>
<p>High-performance noise reduction equipment within road materials</p>	<p>(Indication below the Mark) Noise reduction without higher sound insulation walls</p>	 <p>Noise reduction without higher sound insulation walls</p>
<p>Impermeable-type steel erosion control weirs (double-wall type) within materials for bridges/rivers/harbors Special-type mat cylinders and gabion within materials for bridges/rivers/harbors</p>	<p>(Indication below the Mark) X% of on-site sand/gravel usable for hearding materials or 70% or more of on-site sand/gravel usable for hearding materials</p> <p>*: The name of the recycled materials used shall be described and the proportional content in X (in integral numbers, dropping the first digits). *: When products within the same product category have a different proportional content of the relevant recycled materials, the lowest value within the same product category shall be stated.</p>	 <p>X% of on-site sand/gravel usable for hearding materials</p>  <p>70% or more of on-site sand/gravel usable for hearding materials</p>

<p>Impermeable-type steel erosion control weirs (a steel frame type) within materials for bridges/river/harbors</p>	<p>(Indication below the Mark) X% of on-site gravel usable for hearding materials or 70% or more of on-site gravel usable for hearding materials</p> <p>*: The name of the recycled materials used shall be described and the proportional content in X (in integral numbers, dropping the first digits). *: When products within the same product category have a different proportional content of the relevant recycled materials, the lowest value within the same product category shall be stated.</p>	 <p>X% of on-site gravel usable for hearding materials</p>  <p>70% or more of on-site gravel usable for hearding materials</p>
<p>Permeable-type steel erosion control weirs within materials for bridges/river/harbors</p>	<p>(Indication below the Mark) Embankment that does not separate rivers</p>	 <p>Embankment that does not separate rivers</p>
<p>Non-chloride type antifreezing agents within other materials</p>	<p>(Indication below the Mark) Non-chloride antifreezing agent</p>	 <p>Non-chloride antifreezing agent</p>
<p>Slope protection net within other materials</p>	<p>(Indication below the Mark) Less than 30% of the trees are felled in the area</p>	 <p>Less than 30% of the trees are felled in the area</p>
<p>Applicable products using recycled materials other than the above</p>	<p>(Indication below the Mark) <u>Recycle materials used X%.</u> <u>aggregates, cement</u> or <u>Recycle materials used X% or more.</u> <u>aggregates, cement</u></p> <p>*: The name of the recycled materials used shall be described and the</p>	 <p><u>Recycle materials used X%.</u> <u>aggregates, cement</u></p>

	<p>proportional content in X (in integral numbers, dropping the first digits).</p> <p>*: If using multiple types of recycled materials, the top two types in descending order of their proportional content shall be stated, and the total proportional content of recycled materials shall be stated in X (in integral numbers, dropping the first digits).</p> <p>*: When products within the same product category have a different proportional content of the relevant recycled materials, the lowest value within the same product category shall be stated.</p> <p>*: For X, indicate the weight percentage of the used recycled materials (round off decimal numbers to integers).</p>	 <p><u>Recycle materials used</u> <u>X% or more, aggregates, cement</u></p>
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Interpretation

“Civil Engineering Products Version1.3”

Established: January 15, 2005

[P1]

1 . Applicable Products

< Omission >

[P3]

1-11 . Landscaping/revegetation materials

Trees, vegetable seeds, agricultural chemicals, fertilizer, and soil conditioners were omitted from this Product Category since they require evaluation from a different perspective than other civil engineering materials. Fertilizer bags to be used for vegetation nets, which meet the environmental criteria, are included in this Product Category. Mowing machines, which were regarded as construction machinery, were also excluded. Fake stones used for river improvement work or landscape work, which were regarded as one of the construction methods, were also excluded.

1-12 . Adhesive materials

Adhesive materials for civil engineering work were excluded from this Product Category since there are no particular adhesive materials with less environmental impact than others.

1-13 . Paints

Coating materials were excluded since these would be included under Eco Mark Product Category No. 126 “Paints Version1.0”.

1-5. Hot-water Supply Systems Using Solar Energy, Water-saving equipment, and Products Using Solar Battery Module

The applicable products for the Eco Mark Product Category No. 19 “ Hot-water Supply Systems Using Solar Energy” ~~and Eco Mark Product Category No. 26 “Products Using Solar Battery Modules”~~ require separate review, and were excluded from this Product Category. This is because they need a different form of evaluation of their function from other civil engineering products.

Sanitary system appliances and products using photovoltaic cells, which are already included under No.116 “Water-saving Equipment” and No.135 “Products Using Photovoltaic Cells” respectively, were omitted from this Product Category.

< Omission >

[P13]

2-1-6. Concrete products

A. Resource Extraction Stage

A-1 (Resource consumption)

The following point was reviewed under this item:

(1) Use of recycled materials

It is desirable to raise as far as possible the proportion of recycled materials such as cement and aggregate used in producing concrete. The use of recycled materials for cement and aggregate is not reviewed here since it has been discussed separately. It has been determined that criteria should be set for manufacturing concrete products using cement and aggregate that used recycled materials.

B. Manufacturing Stage

B-2 (Discharge of greenhouse gases)

The following point was reviewed under this item:

(1) Emission of carbon dioxide

It is difficult for manufacturer of concrete products to confirm the amount of energy consumption and emission of carbon dioxide on manufacturing stage of cements and aggregates, the materials of concrete products. Consequently, this item has not been

selected as an item for which criteria should be established.

< Omission >

[P18]

E-8 (Use/discharge of hazardous materials)

The following point was reviewed under this item:

(1) Inclusion of hazardous materials in products and their elution

Concrete products are very often placed in the natural environment. Even after their useful life has finished they are left in the open as recycled paving materials or as products that have been disposed of. Accordingly, it is necessary to ensure a level of safety that is at the same level as that of general soil. Based on the criteria for the contents and the elution of specific hazardous substances prescribed in the enforcement regulations for the law for the prevention of soil pollution, as is the case with aggregates, it has been determined that the concentration of hazardous substances in concrete products should be controlled. The results of analyzing inclusion/elution of hazardous materials in whole concrete products shall be submitted, but it is unnecessary to do so by tracing raw materials of concrete products such as cements and aggregates.

< Omission >

[P20]

2-1-10. Temporary materials

A. Resource Extraction Stage

A-1 (Resource consumption)

The following point was reviewed under this item:

(1) Use of recycled materials

It is determined that recycled materials should be promoted. This item has been selected as an item for which criteria concerning the total proportional composition of recycled materials compared to the overall product weight were set since there are products that consist of several kinds of materials.

Molds using recycled paper include some products using virgin pulps on contact surfaces, which aims at maintaining the strength of molds and making it easy to release from concrete. The proportional composition of recycled pulp of the products shall be reduced to 95% under the condition that no release agent is included.

In addition, it is determined that the proportional composition of recycled materials is reduced for plastic molds, since it is technically difficult to increase the composition to 25% or more to maintain the precision of mold.

< Omission >

[P26]

2-1-14-2. Base materials for greening

A . Resource Extraction Stage

A-1(Resource consumption)

The following point was reviewed under this item:

(1) Use of recycled materials

Materials used as base materials for revegetation come in various forms and are made of various raw materials, but usually concentrate on granular solid materials. Accordingly, recycled materials that can be used as base materials for revegetation are the same as those that can be used for drainage materials and remblai. Considering the features of base materials for revegetation, ~~recycled waste~~—plastic, construction and demolition wastes, ~~recycled waste~~—rubber, glass cullet, and glass wool were excluded. It is desirable that the proportion of recycled materials used should be higher.

It has been determined that calcination or vitrification of sludge in the pretreatment of raw materials or in the manufacturing process of products is required

< Omission >

[P25]

2-1-14-3. Non chloride antifreeze agents/antiskid

A. Resource Extraction Stage

A-8 Use/discharge of hazardous materials

The following point was reviewed under this item:

(1) The primary ingredient shall be acetic acid or related materials. Chlorides shall not be included as a prescribed component.

Antifreeze agents whose primary ingredients are calcium acetate, magnesium acetate, potassium acetate, or sodium acetate are less likely to cause metallic or concrete corrosion than the existing antifreeze agents that consist of chlorides such as calcium chloride or sodium chloride. They also have fewer adverse effects on the natural environment, such as on plants, since they quickly decompose in the environment. Conversion to acetic acid related antifreeze agents would reduce environmental impacts. Consequently, it has been determined that criteria for the primary ingredients should be set.

E. Use/Maintenance/Management Stage

E-8 Use/discharge of hazardous materials

The following point was reviewed under this item:

(1) Inclusion of hazardous materials in products and their elution
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This product should secure the safety not to cause soil contamination, since it is used to mix with soil. Consequently, this item has been selected as an item for which criteria should be established.

There is concern that the increasing emission of waste gypsum boards will put pressure on disposal sites, which causes the discussion on the effective use of waste gypsum boards. Waste gypsum board basically has two types: one generated from factories and construction sites of new buildings and one generated from sites of dismantling buildings. Some of the old products contain small quantity of asbestos. In addition, although the proper treatments are regulated by law, law does not allow gypsum boards with asbestos to be recycled and there are some doubts as to the complete elimination. Placing emphasis on safety, the Eco Mark Office has decided not to certify the products using waste gypsum boards as foundation improvement materials without confirming that no asbestos is included.

Revised: April 28, 2006