



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-BY-24002E

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

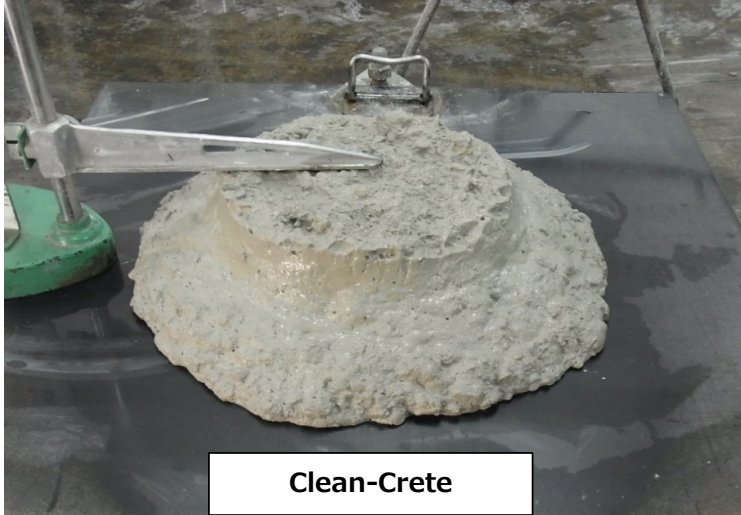
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan

<https://ecoleaf-label.jp/>



MAKE BEYOND
TRANSCENDING THE ART AND SCIENCE
OF MAKING OF THINGS

Low Carbon Concrete
"Clean-Crete (Nominal strength
= 27 or more 40 or less)"



Clean-Crete



Blast-furnace slag powder

Functional unit

1m³

System boundary

final products intermediate products

Product Stage (Cradle to Gate: A1-A3)

*Stage excluded (A4,A5,B1-B7,C1-C4)

Main specifications of the product

Usage: Construction

Nominal strength:27-40

Product Weight: 2,320kg per 1m³ *

*Calculated value from the mass of input raw materials

Production site: Jonanjima, Ota-ku, Tokyo, Japan

Company Information

Obayashi Corporation

Environmental Management Division

TEL : +81-3-5769-1002

Registration#	JR-BY-24002E
PCR number	PA-172210-BY-02
PCR name	Ready-mixed Concrete (intermediate goods)
Publication date	6/5/2024
Verification date	5/21/2024
Verification method	Product-by-product
Verification#	JV-BY-24002
Expiration date	5/20/2029

PCR review was conducted by:

Approval date	9/1/2023
PCR review panel chair	Masayuki Kanzaki <small>(Affiliation:Sustainable Management Promotion Organization)</small>

Third party verifier*

Yasuo Koseki

Independent verification of data & declaration in accordance with ISO14025

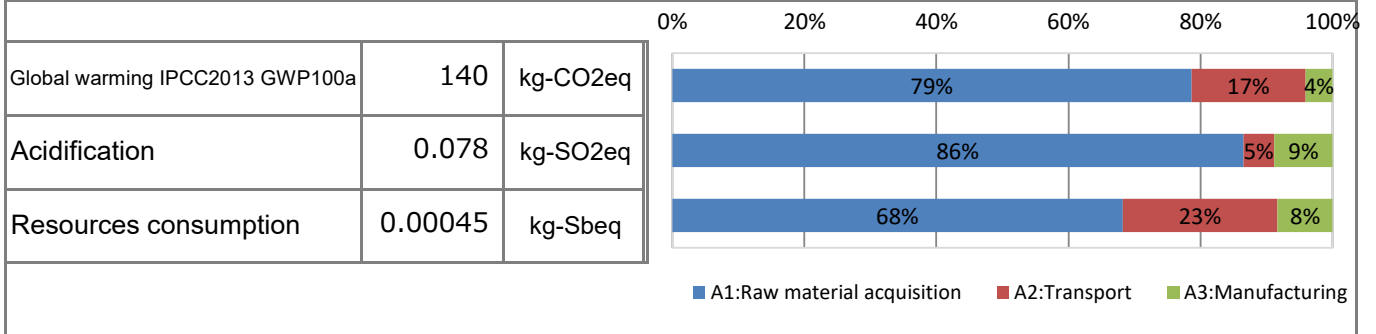
internal external

*Auditor's name is stated if system certification has been performed.

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1. Results of life cycle impact assessment (LCIA)



Parameter	stage	Unit	Total	A1:Raw material acquisition	A2:Transport	A3:Manufacturing
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	1.4E+02	1.1E+02	2.5E+01	5.8E+00
Ozone layer destruction		kg-CFC-11eq	6.4E-06	5.2E-06	2.6E-10	1.2E-06
Acidification		kg-SO ₂ eq	7.8E-02	6.8E-02	3.7E-03	6.9E-03
Photochemical ozone		kg-C ₂ H ₄ eq	5.3E-04	3.8E-04	5.0E-05	1.0E-04
Eutrophication		kg-PO ₄ ³⁻ eq	5.3E-04	5.3E-04	2.4E-10	3.0E-07
Land use(Transformation)		m ²	3.3E-02	3.1E-02	9.6E-05	1.7E-03
Resources consumption		kg-Sbeq	4.5E-04	3.0E-04	1.0E-04	3.7E-05

2. Life cycle inventory analysis (LCI)

Parameter	Value	Unit
Non-renewable material resources	1.9E+03	kg
Non-renewable energy resources	3.3E+01	kg
Non-renewable energy resources	1.3E+03	MJ
Renewable material resources	9.8E+00	kg
Renewable primary energy	1.2E+02	MJ
Consumption of freshwater	4.9E-01	m ³

3. Material composition

Material	Value	Unit
Cement (Portland cement)	4.0	%
Admixture (Blast-furnace slag powder)	12	%
Aggregate (Fine aggregate)	36	%
Aggregate (Coarse aggregate)	40	%
Sub-materials (Chemical admixture)	0.2	%
Water	7.5	%

4. Waste to disposal

Parameter	Value	Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	3.0E-01	kg

*Data derived from LCA and not assigned to the impact categories of LCIA



5. Additional explanation

- Primary data were obtained only for domestic and marine transportation distances for raw material procurement and transportation of waste recycled materials, and the scenarios in PCR Annex B were applied for the means of transportation.
- The characteristics of the product require that ready-mixed concrete be transported to the site within a certain amount of time according to JIS standards, as the cement reacts with water and begins to harden over time. Therefore, the scope of this declaration is limited to the manufacturing site described in this declaration.
- The breakdown of the components by weight is "Cement (Portland cement) 4.0%, Admixture (Blast-furnace slag powder) 12%, Aggregate (Fine aggregate) 36%, Aggregate (Coarse aggregate) 40%, Sub-materials (Chemical admixture) 0.2%, Water 7.5%.
- The total annual production of ready-mixed concrete at the production site for the primary data collection period was approximately 100,000 m³.

6-1. Supplementary environmental information

- This concrete reduces carbon dioxide emissions compared to ordinary concrete by replacing a portion of the cement with an industrial byproduct such as blast furnace slag powder, which has a lower carbon emissions.
- This product's declaration URL:
<https://ecoleaf-label.jp/en/epd/1583>

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
Calcium sulfate	7778-18-9	Act on the Regulation of Manufacture and Evaluation of Chemical Substances
Polycarboxylate	not disclosed	Act on the Regulation of Manufacture and Evaluation of Chemical Substances
Hydroxycarboxylate	not disclosed	Act on the Regulation of Manufacture and Evaluation of Chemical Substances
Sodium dodecyl sulfate	151-21-3	<ul style="list-style-type: none"> • Act on the Regulation of Manufacture and Evaluation of Chemical Substances • Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement
Sodium poly(oxyethylene) dodecyl ether sulfate	68585-34-2	<ul style="list-style-type: none"> • Act on the Regulation of Manufacture and Evaluation of Chemical Substances • Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement

7. Assumptions of secondary data used

Used the IDEA v3.1.0

8. Remarks

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- For data quantification, please refer to PCR and Rules on quantification and declaration.
- Comparative assertion is permitted only when Rules on quantification and declaration are satisfied.
(Reference URL : <https://ecoleaf-label.jp/regulation/>)