



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-BH-23004E

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

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

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



## JPC Highly Durable PCaPC Posttension Girder & Beam Products ( $F_c=60N/mm^2$ )



### Functional unit

1m<sup>3</sup>

### System boundary

final products       intermediate products

Product Stage (Cradle to Gate: A1-A3)

### Main specifications of the product

Product Number: JPC-Post-PG-PB-60

Specified Design Strength: 60N/mm<sup>2</sup>

Product Weight: 2,600kg per 1m<sup>3</sup>

JPC Tomakomai Factory

### Company Information

JAPAN PRECAST CONCRETE CO., LTD.

Tomakomai Factory

TEL +81-144-55-1230

Registration#	JR-BH-23004E
PCR number	PA-172290-BH-05
PCR name	Precast Concrete PC (intermediate goods)
Publication date	12/22/2023
Verification date	12/11/2023
Verification method	Product-by-product
Verification#	JV-BH-23004
Expiration date	12/10/2028
PCR review was conducted by:	
Approval date	9/1/2023
PCR review panel chair	Ken Yamagishi <small>(Affiliation:Sustainable Management Promotion Organization)</small>

### Third party verifier\*

Tetsuya Okuyama

Independent verification of data & declaration in accordance with ISO14025 and ISO21930

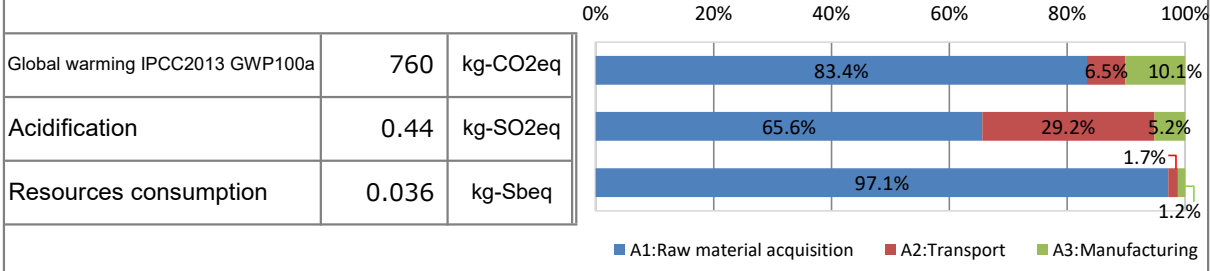
internal       external

\*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 <sub>2</sub> eq	7.6E+02	6.3E+02	4.9E+01	7.6E+01
Ozone layer destruction		kg-CFC-11eq	7.7E-07	7.5E-07	1.4E-09	1.3E-08
Acidification		kg-SO <sub>2</sub> eq	4.4E-01	2.9E-01	1.3E-01	2.3E-02
Eutrophication		kg-PO <sub>4</sub> <sup>3-</sup> eq	2.6E-04	1.8E-05	4.3E-08	2.4E-04
Photochemical ozone		kg-C <sub>2</sub> H <sub>4</sub> eq	5.8E-02	2.0E-03	2.6E-04	5.6E-02
Resources consumption		kg-Sbeq	3.6E-02	3.5E-02	6.1E-04	4.3E-04

**2. Life cycle inventory analysis (LCI)**

Parameter	Unit
Renewable primary energy	5.1E+01 MJ
Non-renewable energy resources	1.9E+02 kg
Non-renewable energy resources	6.9E+03 MJ
Renewable material resources	4.7E+01 kg
Non-renewable material resources	2.7E+03 kg
Consumption of freshwater	1.2E+00 m <sup>3</sup>

**3. Material composition**

Material	Unit
Cement	18 %
Admixture	0.21 %
Aggregates	77 %
Rebars and PC wires	4.6 %
Other materials	0.58 %

**4. Waste to disposal**

Parameter	Unit
Hazardous waste	0.00E+00 kg
Non-hazardous waste.	4.3E+01 kg

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



### 5. Additional explanation

<Scope of Lifecycle Stages>

• This declaration result consists of the Cradle to Gate stages (A1:Raw material acquisition, A2:Transport, A3:Manufacturing).

<Outline of Transport Scenarios>

• Primary data were obtained only for domestic transport distances for raw material procurement and transport of waste and scrap iron, and for marine transport distances for PC steel products. For all other cases, the scenarios in PCR Annex B were applied.

### 6-1. Supplementary environmental information

• No toxic substances in the product.

• The design service life of this product shall be 200 years. The specified design service life of the building's structural frame has been verified by a third-party organization, the Center for Better Living (report on verification results dated May 25, 2020).

• The installing of prestress into the structural frame and members of high-strength concrete in advance prevents cracks that cause deterioration and suppresses the intrusion of deterioration factors such as carbonization, resulting in a highly durable product with significantly less deterioration over time.

• This product's declaration URL:

<https://ecoleaf-label.jp/en/epd/1266>

### 7. Assumptions of secondary data used

Based on the IDEA v2.1.3 and the intensity data v1.12 registered in Japan EPD Program by SuMPO

### 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/>)