



# ENVIRONMENTAL PRODUCT DECLARATION

## IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Ready-mixed concrete/ 33-21-20N  
Miyamatsujyounan PLC



### EPD HUB, HUB-5099

Published on 24.01.2026, last updated on 24.01.2026, valid until 24.01.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

One Click LCA  Created with One Click LCA



# 一般情報 - GENERAL INFORMATION

## メーカー

### MANUFACTURER

|                           |   |
|---------------------------|---|
| メーカー名<br>Manufacturer     | Miyamatsujounan PLC   |
| 住所<br>Address             | 1-1-3 Jonanjima, Ota-ku, Tokyo, Japan                             |
| 問い合わせ先<br>Contact details | ogiyama@miyamatsu-j.jp  |
| ウェブサイト<br>Website         | <a href="http://www.miyamatsu-j.jp">http://www.miyamatsu-j.jp</a> |

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

## EPD 規格、スコープ、認証機関

### EPD STANDARDS, SCOPE AND VERIFICATION

|                                |  |
|--------------------------------|--|
| プログラムオペレータ<br>Program operator | EPD Hub, hub@epdhub.com  |
| 参照規格<br>Reference standard     | EN 15804:2012+A2:2019/AC:2021 and ISO 14025  |
| PCR<br>PCR                     | EPD Hub Core PCR Version 1.2, 24 Mar 2025  |
| 製品カテゴリ<br>Sector               | Construction product   |
| EPD カテゴリ<br>Category of EPD    | Third party verified EPD   |
| 親 EPD 番号<br>Parent EPD number  | -  |
| EPD のスコープ<br>Scope of the EPD  | Cradle to gate with modules C1-C4, D   |
| EPD 申請者<br>EPD author          | Shigenori Ogiyama  |
| EPD 検証<br>EPD verification     | Independent verification of this EPD and data, according to ISO 14025:<br><input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification |
| EPD 検証<br>EPD verifier         | Dusan Vukovic, as an authorized verifier acting for EPD Hub Limited  |

**製品 - PRODUCT**

|   |  |
|---|--|
| 製品名<br>Product name   | Ready-mixed concrete/ 33-21-20N                                  |
| 追加ラベル<br>Additional labels                                      | -  |
| 参照製品<br>Product reference                                       | Normal 33-21-20N, with high performance water-reducing admixture |
| 原材料の原産地<br>Place(s) of raw material origin                      | Japan  |
| 製造地<br>Place of production                                      | Jonanjima, Ota-ku, Tokyo   |
| 設置場所および使用場所<br>Place(s) of installation and use                 | Japan  |
| データ取得年<br>Period for data                                       | 2024/04-2025/03  |
| EPD 平均化<br>Averaging in EPD                                     | No grouping  |
| A1-A3 の GWP-fossil 変動率<br>Variation in GWP-fossil for A1-A3 (%) | -  |
| 国際貿易商品番号<br>Global Trade Item Number (GTIN)                     | -  |
| ノルウェー建築製品データベース<br>Norwegian Building Product Database (NOBB)   | -  |
| A1-A3 特定データ (%)<br>A1-A3 Specific data (%)                      | 3.15   |

**環境影響データ概要 - ENVIRONMENTAL DATA SUMMARY**

|  |  |
|--|--|
| 宣言単位<br>Declared unit                            | 1 m <sup>3</sup> of ready-mix concrete |
| 宣言単位あたりの質量<br>Declared unit mass                 | 2300 kg                                |
| 包装の質量<br>Mass of packaging                       | 0 kg                                   |
| GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)          | 429                                    |
| GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)          | 430                                    |
| GWP-total, A1-A3 (kgCO <sub>2</sub> e)           | 430                                    |
| 副資材の投入(%)<br>Secondary material, inputs (%)      | 0                                      |
| 副資材のアウトプット(%)<br>Secondary material, outputs (%) | 0                                      |
| エネルギー使用量計, A1-A3 (kWh)                           | 391                                    |
| 水使用量計、A1-A3 (m <sup>3</sup> )                    | 1.55                                   |
| Net fresh water use, A1-A3 (m <sup>3</sup> )     |  |

## 製品とメーカー - PRODUCT AND MANUFACTURER

### メーカーの概要 - ABOUT THE MANUFACTURER

Miyamatsu Jyounan PLC is a specialized manufacturer of ready-mix concrete used in a variety of construction projects, from residential buildings and high-rise condominium to public infrastructure.

We manufacture and sell regular concrete, paving concrete, recycled aggregate concrete L, high-strength concrete, and special concrete. We are open 24 hours a day, offering overnight shipping services.

### 製品説明 - PRODUCT DESCRIPTION

Ready mix concrete produced by Miyamatsu Jyounan PLC is made using cement, fine aggregates, coarse aggregate and water. Chemical admixtures are used to reduce water content and improve concrete properties.

The product identified in this EPD is 1m3 of ready mix concrete. Normal concrete: Nominal strength 33N/mm<sup>2</sup>, slump 21cm, maximum aggregate size 20mm, ordinary Portland cement, high performance water-reducing admixture

The unit volume mass of the concrete is 2300 kg/m<sup>3</sup>

Further information can be found at:

<http://www.miyamatsu-j.jp>

### 主な原材料構成 - PRODUCT RAW MATERIAL MAIN COMPOSITION

| 原材料カテゴリ<br>Raw material category | 量、質量 - %<br>Amount, mass- % | 原材料源<br>Material origin |
|----------------------------------|-----------------------------|-------------------------|
| 金属<br>Metals                     | 0                           | -                       |
| 鉱物<br>Minerals                   | 99.84                       | cement, aggregates      |

|                                |      |           |
|--------------------------------|------|-----------|
| 化石原料<br>Fossil materials       | 0.16 | admixture |
| バイオマス原料<br>Bio-based materials | 0    | -         |

### 生物起源 CO<sub>2</sub> 含有量 - BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

|  |   |
|--|---|
| 製品の生物起源 CO <sub>2</sub> 含有量、kg C<br>Biogenic carbon content in product, kg C   | - |
| 梱包の生物起源 CO <sub>2</sub> 含有量、kg C<br>Biogenic carbon content in packaging, kg C | - |

### 機能単位と耐用年数 - FUNCTIONAL UNIT AND SERVICE LIFE

|                                      |         |
|--------------------------------------|---------|
| 宣言単位<br>Declared unit                | 1m3     |
| 宣言単位あたりの質量<br>Mass per declared unit | 2300 kg |
| 機能単位<br>Functional unit              | -       |
| 参照耐用年数<br>Reference service life     | -       |

### 化学物質、REACH 高懸念物質 - SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

# 製品のライフサイクル - PRODUCT LIFE-CYCLE

## システム境界 - SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

| Product stage |           |               | Assembly stage |          | Use stage |             |        |             |               |                        |                       | End of life stage |           |                  |          | Beyond the system boundaries |          |           |
|---------------|-----------|---------------|----------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|-------------------|-----------|------------------|----------|------------------------------|----------|-----------|
| A1            | A2        | A3            | A4             | A5       | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                | C2        | C3               | C4       | D                            |          |           |
| x             | x         | x             | ND             | ND       | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | x                 | x         | x                | x        | x                            |          |           |
| Raw materials | Transport | Manufacturing | Transport      | Assembly | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstr./demol.  | Transport | Waste processing | Disposal | Reuse                        | Recovery | Recycling |

Not declared = ND.

## 製造と梱包 - MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

This product is portland cement, water, sand, aggregate (5mm to 20mm), and chemical admixture (high performance water-reducing agent). The raw materials for ready-mix concrete are delivered by truck from nearby

locations, but the aggregate is transported and delivered by ship to ensure a stable supply of high-quality material.

The manufacturing process involves measuring the ingredients on a scale, adding them to a mixer, and mixing them. After mixing for the specified time, the ready-mix concrete is dropped into a hopper at the bottom and loaded into an agitator truck before being delivered to the site.

## 輸送と据付 - TRANSPORT AND INSTALLATION (A4-A5)

This EPD does not cover the transport (A4) and installation (A5) phase.

## 製品使用とメンテナンス - PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

## 製品の廃棄・リサイクル段階 - PRODUCT END OF LIFE (C1-C4, D)

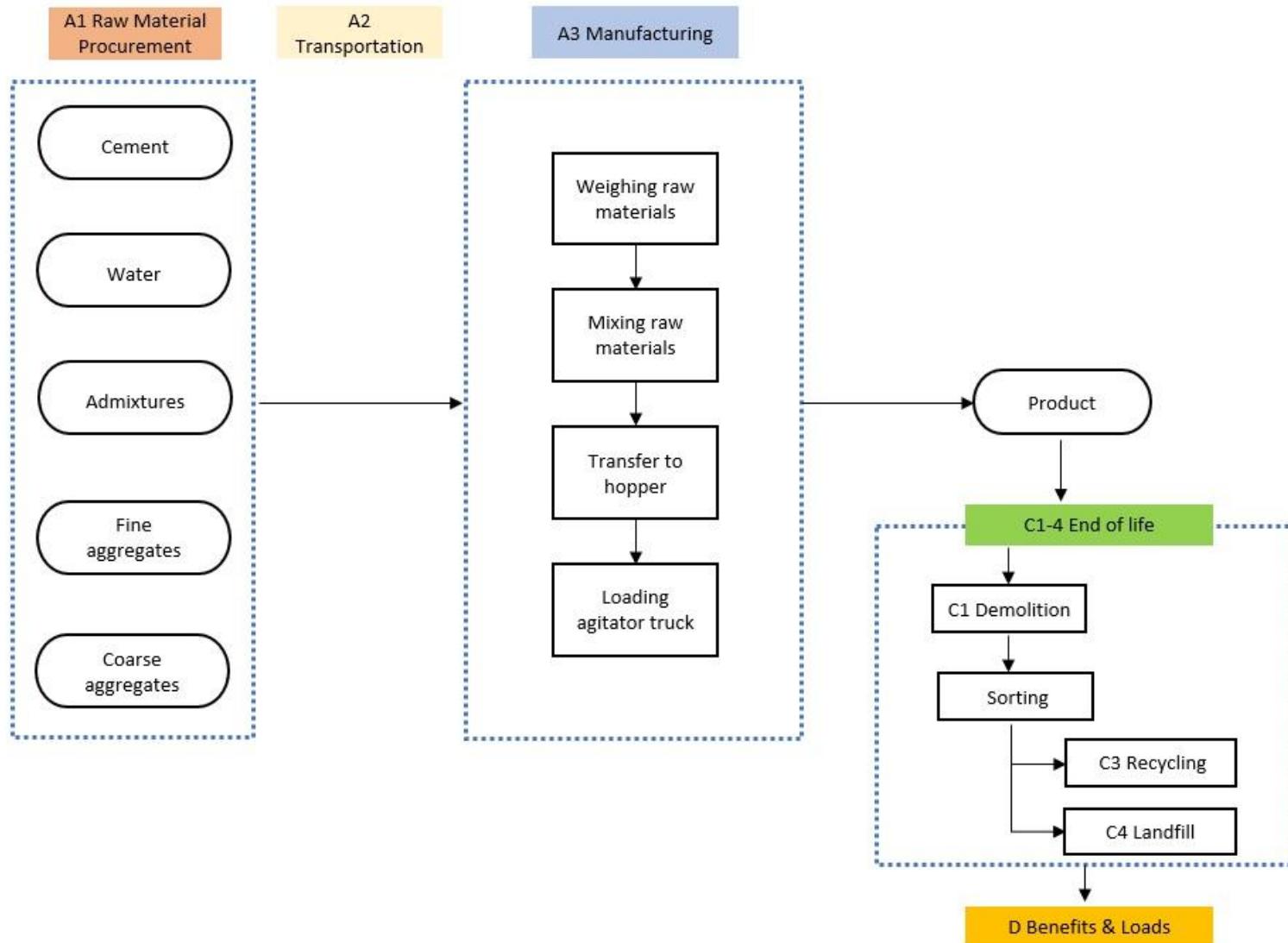
It is assumed that 0.0013L/kg of diesel fuel will be consumed for demolition (C1). This scenario is based on Annual Research Report 2002 published by Tokyo Metropolitan Research Institute for Environmental Protection. The transport from the demolition site to the disposal site (C2) is assumed to be 50 km by truck in all scenarios.

The product scenarios (C3-C4) were developed based on the recycling rate of construction waste in 2024 Research and Study on Recycling of Construction Waste by the Ministry of the Environment.

### Concrete:

In this EPD, concrete waste is transported outside the demolition site and crushed. 99.3% of the crushed concrete is recycled as roadbed material, recycled sand, etc. The remaining 0.7% is landfilled.

## 製造プロセス - MANUFACTURING PROCESS



# ライフサイクルアセスメント - LIFE-CYCLE

## ASSESSMENT

### カットオフ基準 - CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

This LCA study includes all raw material, transportation, energy and emission flows in the product. All processes from raw material procurement, pre-treatment and production are included.

### データの検証- VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

### 配分、推定 - ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

| データタイプ - Data type                              | 配分 - Allocation             |
|---|-----------------------------|
| 原材料 - Raw materials                             | No allocation               |
| 梱包材 - Packaging materials                       | Not applicable              |
| 補助材料 - Ancillary materials                      | Not applicable              |
| 製造エネルギーと廃棄物<br>- Manufacturing energy and waste | Allocated by mass or volume |

### 製品と製造拠点のグループ化 - PRODUCT & MANUFACTURING SITES GROUPING

|  |                |
|--|----------------|
| グループ化の種類 - Type of grouping  | No grouping    |
| グループ化方法 - Grouping method  | Not applicable |
| A1-A3 における GWP-fossil の変動率 - Variation in GWP-fossil for A1-A3 (%) | -              |

This EPD is product and factory specific and does not contain average calculations.

### LCA ソフトウェアと参考文献 - LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent v3.10.1 and One Click LCA databases were used as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

## 環境影響データ - ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

### 主要環境影響指標 - CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

| Impact category                     | Unit                   | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3        | C4        | D         |
|-------------------------------------|------------------------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|-----------|-----------|-----------|
| GWP – total <sup>1)</sup>           | kg CO <sub>2</sub> e   | 4.16E+02 | 9.30E+00 | 4.37E+00 | 4.30E+02 | ND | 1.14E+01 | 1.79E+01 | 9.99E+00  | 1.01E-01  | -2.04E+01 |
| GWP – fossil                        | kg CO <sub>2</sub> e   | 4.16E+02 | 9.29E+00 | 4.37E+00 | 4.29E+02 | ND | 1.14E+01 | 1.79E+01 | 9.99E+00  | 1.01E-01  | -2.04E+01 |
| GWP – biogenic                      | kg CO <sub>2</sub> e   | 2.06E-01 | 1.76E-03 | 5.44E-04 | 2.08E-01 | ND | 1.17E-03 | 4.10E-03 | -1.02E-03 | -3.20E-05 | 0.00E+00  |
| GWP – LULUC                         | kg CO <sub>2</sub> e   | 6.28E-02 | 5.84E-03 | 1.82E-04 | 6.88E-02 | ND | 1.17E-03 | 8.19E-03 | 1.02E-03  | 5.74E-05  | -3.90E-03 |
| Ozone depletion pot.                | kg CFC-11e             | 1.16E-05 | 1.33E-07 | 2.17E-07 | 1.19E-05 | ND | 1.75E-07 | 2.61E-07 | 1.53E-07  | 2.91E-09  | -1.62E-06 |
| Acidification potential             | mol H <sup>+</sup> e   | 1.17E+00 | 2.08E-01 | 2.03E-02 | 1.40E+00 | ND | 1.03E-01 | 8.14E-02 | 9.02E-02  | 7.12E-04  | -1.86E-01 |
| EP-freshwater <sup>2)</sup>         | kg Pe                  | 7.86E-03 | 4.06E-04 | 5.19E-04 | 8.78E-03 | ND | 3.30E-04 | 1.43E-03 | 2.89E-04  | 8.26E-06  | -3.02E-04 |
| EP-marine                           | kg Ne                  | 2.84E-01 | 4.79E-02 | 3.89E-03 | 3.36E-01 | ND | 4.79E-02 | 3.06E-02 | 4.18E-02  | 2.72E-04  | -3.53E-02 |
| EP-terrestrial                      | mol Ne                 | 3.32E+00 | 5.33E-01 | 4.10E-02 | 3.90E+00 | ND | 5.24E-01 | 3.33E-01 | 4.58E-01  | 2.97E-03  | -4.62E-01 |
| POCP ("smog") <sup>3)</sup>         | kg NMVOCe              | 8.64E-01 | 1.50E-01 | 1.20E-02 | 1.03E+00 | ND | 1.56E-01 | 1.15E-01 | 1.37E-01  | 1.06E-03  | -1.09E-01 |
| ADP-minerals & metals <sup>4)</sup> | kg Sbe                 | 1.79E-03 | 1.36E-05 | 9.16E-07 | 1.81E-03 | ND | 4.10E-06 | 5.75E-05 | 3.58E-06  | 1.60E-07  | -2.08E-03 |
| ADP-fossil resources                | MJ                     | 1.86E+03 | 1.17E+02 | 5.72E+01 | 2.03E+03 | ND | 1.50E+02 | 2.55E+02 | 1.31E+02  | 2.47E+00  | -2.84E+02 |
| Water use <sup>5)</sup>             | m <sup>3</sup> e depr. | 5.97E+01 | 4.12E-01 | 2.93E+01 | 8.95E+01 | ND | 3.74E-01 | 1.23E+00 | 3.27E-01  | 7.12E-03  | -1.27E+01 |

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential;

5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

### 追加(オプション)の環境影響指標 - ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

| Impact category                  | Unit      | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3       | C4       | D         |
|----------------------------------|-----------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|----------|----------|-----------|
| Particulate matter               | Incidence | 7.85E-06 | 3.66E-07 | 3.46E-07 | 8.56E-06 | ND | 2.93E-06 | 1.72E-06 | 1.95E-05 | 1.62E-08 | -1.41E-06 |
| Ionizing radiation <sup>6)</sup> | kBq U235e | 1.31E+01 | 6.94E-02 | 5.10E-02 | 1.32E+01 | ND | 6.62E-02 | 2.18E-01 | 5.79E-02 | 1.55E-03 | -2.37E+00 |
| Ecotoxicity (freshwater)         | CTUe      | 3.88E+03 | 1.09E+01 | 5.99E+00 | 3.90E+03 | ND | 8.23E+00 | 4.02E+01 | 7.20E+00 | 2.07E-01 | -3.01E+02 |
| Human toxicity, cancer           | CTUh      | 7.00E-08 | 2.00E-09 | 1.99E-10 | 7.22E-08 | ND | 1.18E-09 | 4.39E-09 | 1.03E-09 | 1.85E-11 | -1.57E-08 |
| Human tox. non-cancer            | CTUh      | 4.32E-06 | 3.83E-08 | 1.63E-08 | 4.37E-06 | ND | 1.86E-08 | 1.76E-07 | 1.63E-08 | 4.26E-10 | -2.89E-07 |
| SQP <sup>7)</sup>                | -         | 3.22E+03 | 2.67E+01 | 4.08E+00 | 3.25E+03 | ND | 1.05E+01 | 1.91E+02 | 9.16E+00 | 4.86E+00 | -5.35E+01 |

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

### 天然資源の利用 - USE OF NATURAL RESOURCES

| Impact category                    | Unit           | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3       | C4       | D         |
|------------------------------------|----------------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|----------|----------|-----------|
| Renew. PER as energy <sup>8)</sup> | MJ             | 1.31E+02 | 1.17E+00 | 3.80E-01 | 1.32E+02 | ND | 9.47E-01 | 3.62E+00 | 8.28E-01 | 2.38E-02 | -2.71E+01 |
| Renew. PER as material             | MJ             | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| Total use of renew. PER            | MJ             | 1.31E+02 | 1.17E+00 | 3.80E-01 | 1.32E+02 | ND | 9.47E-01 | 3.62E+00 | 8.28E-01 | 2.38E-02 | -2.71E+01 |
| Non-re. PER as energy              | MJ             | 1.10E+03 | 1.17E+02 | 5.77E+01 | 1.28E+03 | ND | 1.50E+02 | 2.55E+02 | 1.31E+02 | 2.47E+00 | -2.84E+02 |
| Non-re. PER as material            | MJ             | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| Total use of non-re. PER           | MJ             | 1.10E+03 | 1.17E+02 | 5.77E+01 | 1.28E+03 | ND | 1.50E+02 | 2.55E+02 | 1.31E+02 | 2.47E+00 | -2.84E+02 |
| Secondary materials                | kg             | 4.07E-01 | 6.33E-02 | 2.40E-03 | 4.73E-01 | ND | 6.21E-02 | 1.14E-01 | 5.43E-02 | 6.20E-04 | -1.72E-01 |
| Renew. secondary fuels             | MJ             | 6.53E-03 | 2.30E-04 | 2.22E-05 | 6.78E-03 | ND | 1.62E-04 | 1.45E-03 | 1.42E-04 | 1.28E-05 | 1.09E-05  |
| Non-ren. secondary fuels           | MJ             | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| Use of net fresh water             | m <sup>3</sup> | 1.50E+00 | 1.05E-02 | 3.70E-02 | 1.55E+00 | ND | 9.89E-03 | 3.59E-02 | 8.64E-03 | 2.56E-03 | -1.59E-01 |

8) PER = Primary energy resources.

### 廃棄・リサイクル段階 - 廃棄 - END OF LIFE - WASTE

| Impact category     | Unit | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3       | C4       | D         |
|---------------------|------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|----------|----------|-----------|
| Hazardous waste     | kg   | 7.56E+00 | 1.85E-01 | 8.40E-03 | 7.75E+00 | ND | 1.66E-01 | 4.47E-01 | 1.46E-01 | 2.72E-03 | -1.10E+00 |
| Non-hazardous waste | kg   | 2.00E+02 | 2.70E+00 | 3.06E-01 | 2.03E+02 | ND | 2.27E+00 | 8.39E+00 | 1.98E+00 | 6.23E-02 | -3.59E+01 |
| Radioactive waste   | kg   | 7.30E-03 | 1.70E-05 | 7.71E-06 | 7.33E-03 | ND | 1.63E-05 | 5.33E-05 | 1.42E-05 | 3.78E-07 | -1.29E-03 |

### 廃棄・リサイクル段階 - 出力フロー - END OF LIFE - OUTPUT FLOWS

| Impact category               | Unit | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3       | C4       | D        |
|-------------------------------|------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|----------|----------|----------|
| Components for re-use         | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for recycling       | kg   | 0.00E+00 | 0.00E+00 | 3.45E+01 | 3.45E+01 | ND | 0.00E+00 | 0.00E+00 | 2.28E+03 | 0.00E+00 | 0.00E+00 |
| Materials for energy rec      | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy               | MJ   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy - Electricity | MJ   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy - Heat        | MJ   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

### 環境影響 - ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

| Impact category      | Unit                               | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3       | C4       | D         |
|----------------------|------------------------------------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|----------|----------|-----------|
| Global Warming Pot.  | kg CO <sub>2</sub> e               | 4.12E+02 | 9.25E+00 | 4.35E+00 | 4.26E+02 | ND | 1.14E+01 | 1.78E+01 | 9.94E+00 | 9.96E-02 | -2.04E+01 |
| Ozone depletion Pot. | kg CFC-11e                         | 9.32E-06 | 1.06E-07 | 1.90E-07 | 9.61E-06 | ND | 1.39E-07 | 2.08E-07 | 1.21E-07 | 2.31E-09 | -1.30E-06 |
| Acidification        | kg SO <sub>2</sub> e               | 9.28E-01 | 1.68E-01 | 1.68E-02 | 1.11E+00 | ND | 7.26E-02 | 6.05E-02 | 6.34E-02 | 5.27E-04 | -1.29E-01 |
| Eutrophication       | kg PO <sub>4</sub> <sup>3-</sup> e | 2.85E-01 | 1.75E-02 | 2.91E-03 | 3.05E-01 | ND | 1.70E-02 | 1.48E-02 | 1.48E-02 | 1.68E-04 | -3.25E-02 |
| POCP ("smog")        | kg C <sub>2</sub> H <sub>4</sub> e | 4.34E-02 | 8.44E-03 | 7.51E-04 | 5.26E-02 | ND | 5.44E-03 | 5.02E-03 | 4.75E-03 | 4.99E-05 | -5.39E-03 |
| ADP-elements         | kg Sbe                             | 1.83E-03 | 1.34E-05 | 8.95E-07 | 1.85E-03 | ND | 3.98E-06 | 5.61E-05 | 3.48E-06 | 1.57E-07 | -2.08E-03 |
| ADP-fossil           | MJ                                 | 2.21E+03 | 1.16E+02 | 5.71E+01 | 2.38E+03 | ND | 1.48E+02 | 2.52E+02 | 1.30E+02 | 2.44E+00 | -2.86E+02 |

**環境影響 - ENVIRONMENTAL IMPACTS – GWP-GHG**

| Impact category       | Unit                 | A1       | A2       | A3       | A1-A3    | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1       | C2       | C3       | C4       | D         |
|-----------------------|----------------------|----------|----------|----------|----------|----|----|----|----|----|----|----|----|----|----------|----------|----------|----------|-----------|
| GWP-GHG <sup>9)</sup> | kg CO <sub>2</sub> e | 4.16E+02 | 9.30E+00 | 4.37E+00 | 4.29E+02 | ND | 1.14E+01 | 1.79E+01 | 9.99E+00 | 1.01E-01 | -2.04E+00 |

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH<sub>4</sub> fossil, CH<sub>4</sub> biogenic and Dinitrogen monoxide – were updated in line with the guidance. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO<sub>2</sub> is set to zero.

**シナリオドキュメント- SCENARIO DOCUMENTATION**
**製造エネルギー・シナリオドキュメント - Manufacturing energy scenario documentation**

| Scenario parameter                       | Value   |
|--|---|
| Electricity data source and quality      | Electricity, consumption mix w/o renewables, Japan, One Click LCA |
| Electricity CO <sub>2</sub> e / kWh      | 0.92 kg CO <sub>2</sub> e / kWh                                   |
| District heating data source and quality | -   |
| District heating CO <sub>2</sub> e / kWh | -   |

**廃棄・リサイクル段階のシナリオドキュメント-End of life scenario documentation**

| Scenario information                               | Value                      |
|--|----------------------------|
| Collection process – kg collected separately       | 2300.0                     |
| Collection process – kg collected with mixed waste | -                          |
| Recovery process – kg for re-use                   | -                          |
| Recovery process – kg for recycling                | 2283.9                     |
| Recovery process – kg for energy recovery          | -                          |
| Disposal (total) – kg for final deposition         | 16.1                       |
| Scenario assumptions e.g. transportation           | Transported 50 km by lorry |

## 檢証報告 - THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

### Verified tools

Tool verifier: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

Dusan Vukovic, as an authorized verifier acting for EPD Hub Limited  
24.01.2026

