
# ENVIRONMENTAL PRODUCT DECLARATION

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

Excel Precast Green Concrete FL40LHG
Excel Precast Pte Ltd/Excel Precast Sdn Bhd

**EPD HUB, HUB-3698**
Published on 24.07.2025, last updated on 24.07.2025, valid until 24.01.2027

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

Created with One Click LCA

Excel Precast Pte Ltd

# GENERAL INFORMATION

## MANUFACTURER

| | |
|---|---|
| Manufacturer | Excel Precast Pte Ltd/Excel Precast Sdn Bhd |
| Address | 16 Kaki Bukit View, Kaki Bukit Techpark II, Singapore 415952.<br><br>Lot 2671, Lot 2674, Lot 3639 & Lot 3640 Jalan Skudai-Pontian Kulai Johor Bahru, Malaysia 81500 |
| Contact details | sales@excel-precast.com.sg |
| Website | https://www.excel-precast.com.sg/ |

## EPD STANDARDS, SCOPE AND VERIFICATION

| | |
|---|---|
| Program operator | EPD Hub, hub@epdhub.com |
| Reference standard | EN 15804:2012+A2:2019/AC:2021 and ISO 14025 |
| PCR | EPD Hub Core PCR Version 1.1, 5 Dec 2023 |
| Sector | Construction product |
| Category of EPD | Third party verified EPD |
| Scope of the EPD | Cradle to gate with options, A4-A5, and modules C1-C4, D |
| EPD author | Yap Ee Gin |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025:<br>☐ Internal verification ☑ External verification |
| EPD verifier | Imane Uald Lamkaddam as an authorized verifier for EPD Hub |

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.

## PRODUCT

| | |
|---|---|
| Product name | Excel Precast Green Concrete FL40LHG |
| Additional labels | |
| Product reference | |
| Place(s) of raw material origin | Malaysia |
| Place of production | Johor-Malaysia, Singapore |
| Place(s) of installation and use | Johor-Malaysia, Singapore |
| Period for data | April 2025 - May 2025 |
| Averaging in EPD | Multiple factories |
| Variation in GWP-fossil for A1-A3 (%) | 0 |
| A1-A3 Specific data (%) | 7,83 |

## ENVIRONMENTAL DATA SUMMARY

| | |
|---|---|
| **Declared unit** | 1 m3 of Excel Precast Green Concrete FL40LHG |
| **Declared unit mass** | 2374 kg |
| **GWP-fossil, A1-A3 ($kgCO_2e$)** | 2,97E+02 |
| **GWP-total, A1-A3 ($kgCO_2e$)** | 2,98E+02 |
| **Secondary material, inputs (%)** | 0,02 |
| **Secondary material, outputs (%)** | 99,2 |
| **Total energy use, A1-A3 (kWh)** | 505 |
| **Net freshwater use, A1-A3 ($m^3$)** | 1,2 |

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

Excel Precast Pte Ltd was incorporated in 1999. The company's business objective is to supply precast concrete component for use in the construction industry. Excel Precast Pte Ltd also provides technical assistance to our clients in the development of precast construction methods for their Design & Build projects. This is achieved through our experienced and capable design team. To assist our clients in driving higher productivity and better quality for their projects, Excel Precast Pte Ltd also provides alternative proposals to convert projects originally designed for cast in-situ construction into precast method of construction.

We have 3 manufacturing plants at Singapore, Senai and Ulu Choh, Johor, Malaysia with production capacity is over 100,000 m3 per year.

## PRODUCT DESCRIPTION

Ready-mixed green concrete formulated with environmentally responsible materials with a mixing of low heat cement, fine aggregates and coarse aggregates, water with chemical admixtures. This concrete product delivers exceptional performance while significantly reducing carbon emissions compared to the traditional mixes. Our ready-mix concrete offers superior compressive strength, consistent workability, and reliable curing times. This product ensures both long-term resilience and environmental compliance whether in building foundations, structural frames, or infrastructure components.

Further information can be found at:
https://www.excel-precast.com.sg/

## PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin |
|---|---|---|
| Metals | 0 | NA |
| Minerals | 99,85 | Malaysia |
| Fossil materials | 0,15 | Malaysia |
| Bio-based materials | 0 | NA |

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

| | |
|---|---|
| Biogenic carbon content in product, kg C | 0 |
| Biogenic carbon content in packaging, kg C | 0 |

## FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|---|---|
| Declared unit | 1 m3 of Excel Precast Green Concrete FL40LHG |
| Mass per declared unit | 2374 kg |
| Functional unit | |
| Reference service life | |

## SUBSTANCES, REACH - VERY HIGH CONCERN

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

# PRODUCT LIFE-CYCLE

## 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 | x | x | MND | MND | MND | MND | MND | MND | MND | x | x | x | x | x | | |
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction/ demolition | Transport | Waste processing | Disposal | Reuse | Recovery | Recycling |

*Modules not declared = MND. Modules not relevant = MNR*

## 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.

The environmental impacts associated with the product stage have been evaluated, with a primary focus on raw material extraction and processing. The analysis also considers energy consumption and waste generation during the manufacturing phase.

Raw materials are sourced from third-party suppliers in Malaysia and transported to the production facility by road using trucks. The transportation impact assessment reflects this supply chain setup.

The manufacturing process is designed as a closed-loop system. Any raw material waste generated during production is recycled and reintegrated into the utilization process, ensuring zero raw material loss.

## TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation-to-site scenario is analyzed based on local conditions and statistical data representative of the market area in which the product is sold. The analysis considers typical transport distances, vehicle types, and load capacities to reflect realistic logistics operations.

Installation at the construction site is considered to have 0.1% product loss, based on project experience.

## PRODUCT USE AND MAINTENANCE (B1-B7)

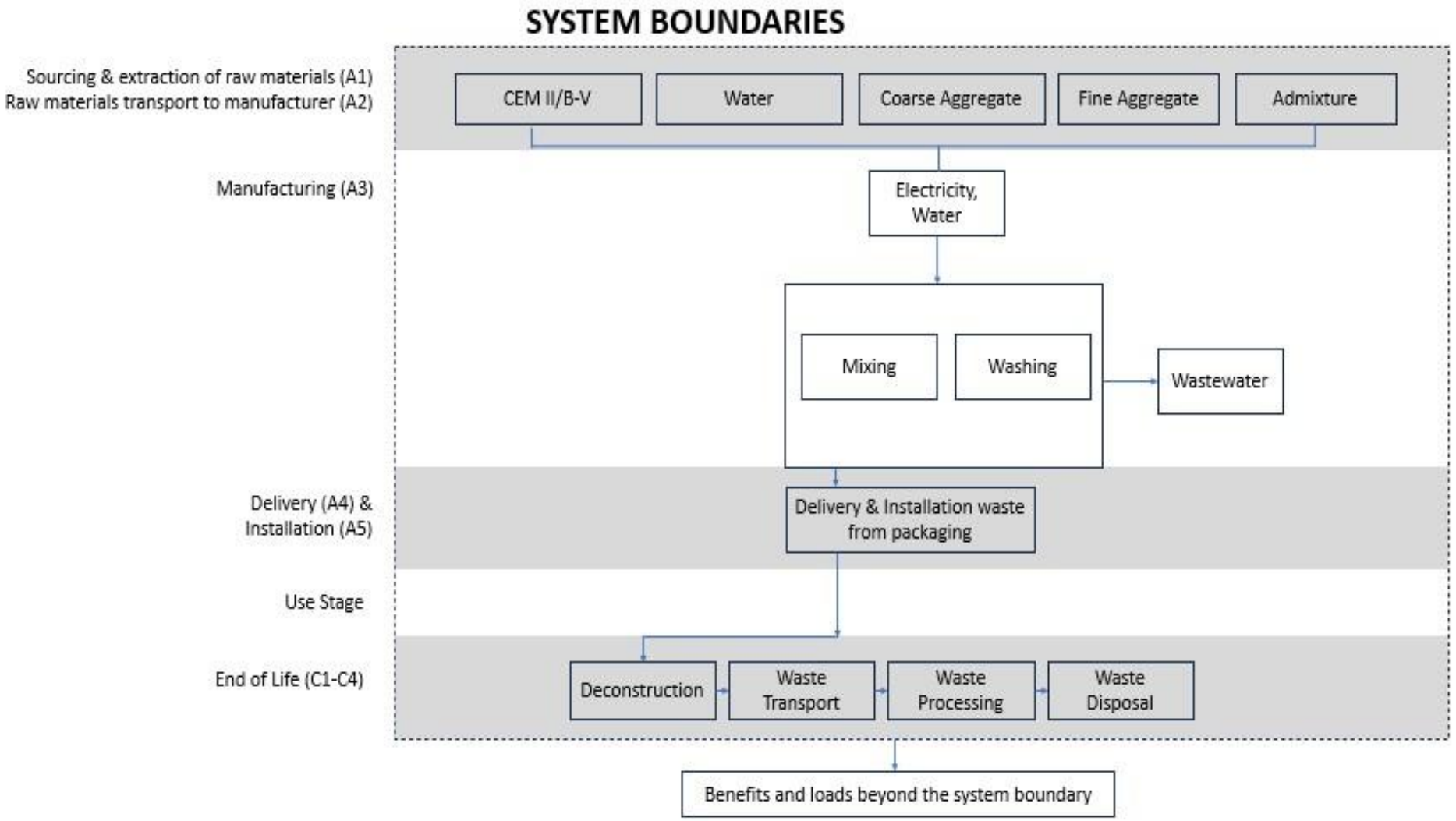
Product use and maintenance are not included in this study.
Air, soil, and water impacts during the use phase have not been studied.

## PRODUCT END OF LIFE (C1-C4, D)

C1 includes product deconstruction and demolition. The concrete product becomes part of the structure and is removed during demolition. Fuel consumption is excluded due to project variability. In C2 stage, the end-of-life product is assumed to have the same mass as declared and is transported to the nearest facility. An average distance of 40 km by lorry is used, based on local conditions. For C3, waste concrete is processed for recycling. In Singapore, approximately 99% of concrete is recycled into recycled concrete aggregate (RCA), with 1% sent to landfill. The final disposal of non-recycled concrete is analyzed at stage C4.

Benefits beyond the system boundary are accounted for in module D. RCA is assumed to replace virgin aggregates in concrete production, and the avoided impacts are credited here. Beside the product, the benefits and loads from biogenic carbon and fossil packing materials are analyzed based on reliable data source.

# MANUFACTURING PROCESS



# LIFE-CYCLE ASSESSMENT

## 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.

## 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.

## 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:

| Data type | Allocation |
|---|---|
| Raw materials | Allocated by mass or volume |
| Packaging material | Not applicable |
| Ancillary materials | Allocated by mass or volume |
| Manufacturing energy and waste | Allocated by mass or volume |

## PRODUCT & MANUFACTURING SITES GROUPING

| | |
|---|---|
| Type of grouping | Multiple factories |
| Grouping method | Based on worst-case results |
| Variation in GWP-fossil for A1-A3, % | 0 |

Single product produced by the same manufacturer in multiple factories, located in Malaysia and Singapore, Difference caused by regional situation (e.g. electricity grid factor) was considered and the relevant factor was chosen as the worse-case one (E.g. Malaysian grid emission factor).

## LCA SOFTWARE AND BIBLIOGRAPHY

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

# 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.*

## 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[1)] | kg $CO_2e$ | 2,74E+02 | 2,13E+01 | 2,24E+00 | 2,98E+02 | 1,66E+01 | 3,14E-01 | MND | MND | MND | MND | MND | MND | MND | 8,64E-03 | 1,02E+01 | 1,03E+01 | 1,49E-01 | -2,29E+01 |
| GWP – fossil | kg $CO_2e$ | 2,74E+02 | 2,13E+01 | 2,21E+00 | 2,97E+02 | 1,66E+01 | 3,14E-01 | MND | MND | MND | MND | MND | MND | MND | 8,53E-03 | 1,02E+01 | 1,03E+01 | 1,49E-01 | -2,28E+01 |
| GWP – biogenic | kg $CO_2e$ | 2,31E-01 | 4,82E-03 | 1,37E-02 | 2,49E-01 | 3,77E-03 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 6,32E-05 | 2,32E-03 | -1,05E-03 | -4,73E-05 | -2,18E-02 |
| GWP – LULUC | kg $CO_2e$ | 6,16E-02 | 9,52E-03 | 1,13E-02 | 8,24E-02 | 7,44E-03 | 8,98E-05 | MND | MND | MND | MND | MND | MND | MND | 4,77E-05 | 4,58E-03 | 1,06E-03 | 8,49E-05 | -2,06E-02 |
| Ozone depletion pot. | kg $CFC\text{-}_{11}e$ | 1,12E-06 | 3,14E-07 | 7,77E-08 | 1,52E-06 | 2,46E-07 | 1,76E-09 | MND | MND | MND | MND | MND | MND | MND | 1,62E-10 | 1,51E-07 | 1,58E-07 | 4,30E-09 | -1,86E-07 |
| Acidification potential | mol $H^+e$ | 8,37E-01 | 7,26E-02 | 1,08E-02 | 9,20E-01 | 5,67E-02 | 9,77E-04 | MND | MND | MND | MND | MND | MND | MND | 4,16E-05 | 3,49E-02 | 9,30E-02 | 1,05E-03 | -1,40E-01 |
| EP-freshwater[2)] | kg Pe | 3,05E-02 | 1,66E-03 | 9,87E-04 | 3,32E-02 | 1,30E-03 | 3,44E-05 | MND | MND | MND | MND | MND | MND | MND | 3,90E-06 | 7,97E-04 | 2,97E-04 | 1,22E-05 | -7,15E-03 |
| EP-marine | kg Ne | 2,35E-01 | 2,38E-02 | 1,84E-03 | 2,61E-01 | 1,86E-02 | 2,79E-04 | MND | MND | MND | MND | MND | MND | MND | 6,26E-06 | 1,15E-02 | 4,31E-02 | 4,02E-04 | -3,33E-02 |
| EP-terrestrial | mol Ne | 2,65E+00 | 2,60E-01 | 1,65E-02 | 2,93E+00 | 2,03E-01 | 3,13E-03 | MND | MND | MND | MND | MND | MND | MND | 5,99E-05 | 1,25E-01 | 4,72E-01 | 4,38E-03 | -4,04E-01 |
| POCP ("smog")[3)] | kg NMVOCe | 7,35E-01 | 1,07E-01 | 4,97E-03 | 8,47E-01 | 8,36E-02 | 9,31E-04 | MND | MND | MND | MND | MND | MND | MND | 1,80E-05 | 5,14E-02 | 1,41E-01 | 1,57E-03 | -1,12E-01 |
| ADP-minerals & metals[4)] | kg Sbe | 1,38E-03 | 5,94E-05 | 2,78E-06 | 1,44E-03 | 4,64E-05 | 1,49E-06 | MND | MND | MND | MND | MND | MND | MND | 6,79E-09 | 2,86E-05 | 3,69E-06 | 2,36E-07 | -1,26E-04 |
| ADP-fossil resources | MJ | 1,41E+03 | 3,09E+02 | 2,57E+01 | 1,75E+03 | 2,41E+02 | 1,99E+00 | MND | MND | MND | MND | MND | MND | MND | 9,92E-02 | 1,49E+02 | 1,35E+02 | 3,65E+00 | -2,80E+02 |
| Water use[5)] | $m^3e$ depr. | 3,93E+01 | 1,53E+00 | 6,91E-01 | 4,15E+01 | 1,19E+00 | 4,27E-02 | MND | MND | MND | MND | MND | MND | MND | 2,73E-03 | 7,34E-01 | 3,37E-01 | 1,05E-02 | -3,54E+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.*

## 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 | 8,46E-06 | 2,13E-06 | 4,24E-08 | 1,06E-05 | 1,67E-06 | 1,23E-08 | MND | MND | MND | MND | MND | MND | MND | 1,09E-10 | 1,02E-06 | 2,01E-05 | 2,40E-08 | -2,14E-06 |
| Ionizing radiation[6)] | kBq U235e | 3,71E+00 | 2,69E-01 | 2,27E-02 | 4,00E+00 | 2,10E-01 | 4,21E-03 | MND | MND | MND | MND | MND | MND | MND | 1,29E-05 | 1,29E-01 | 5,97E-02 | 2,29E-03 | -2,22E+00 |
| Ecotoxicity (freshwater) | CTUe | 4,42E+02 | 4,37E+01 | 4,20E+01 | 5,28E+02 | 3,41E+01 | 5,62E-01 | MND | MND | MND | MND | MND | MND | MND | 1,86E-02 | 2,10E+01 | 7,42E+00 | 3,06E-01 | -6,59E+01 |
| Human toxicity, cancer | CTUh | 4,85E-08 | 3,51E-09 | 3,68E-10 | 5,24E-08 | 2,75E-09 | 5,51E-11 | MND | MND | MND | MND | MND | MND | MND | 6,87E-13 | 1,69E-09 | 1,06E-09 | 2,74E-11 | -6,26E-09 |
| Human tox. non-cancer | CTUh | 1,75E-06 | 2,00E-07 | 1,65E-08 | 1,97E-06 | 1,56E-07 | 2,12E-09 | MND | MND | MND | MND | MND | MND | MND | 3,84E-11 | 9,62E-08 | 1,68E-08 | 6,29E-10 | -1,81E-07 |
| SQP[7)] | - | 2,54E+03 | 3,11E+02 | 3,50E+00 | 2,85E+03 | 2,43E+02 | 3,10E+00 | MND | MND | MND | MND | MND | MND | MND | 1,22E-02 | 1,50E+02 | 9,44E+00 | 7,18E+00 | -2,65E+02 |

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.

## 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[8)] | MJ | 8,45E+01 | 4,23E+00 | 1,97E+00 | 9,07E+01 | 3,31E+00 | 9,40E-02 | MND | MND | MND | MND | MND | MND | MND | 7,29E-03 | 2,04E+00 | 8,53E-01 | 3,52E-02 | -2,69E+01 |
| Renew. PER as material | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Total use of renew. PER | MJ | 8,45E+01 | 4,23E+00 | 1,97E+00 | 9,07E+01 | 3,31E+00 | 9,40E-02 | MND | MND | MND | MND | MND | MND | MND | 7,29E-03 | 2,04E+00 | 8,53E-01 | 3,52E-02 | -2,69E+01 |
| Non-re. PER as energy | MJ | 1,39E+03 | 3,09E+02 | 2,57E+01 | 1,73E+03 | 2,41E+02 | 1,97E+00 | MND | MND | MND | MND | MND | MND | MND | 9,92E-02 | 1,49E+02 | 1,35E+02 | 3,65E+00 | -2,80E+02 |
| Non-re. PER as material | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Total use of non-re. PER | MJ | 1,39E+03 | 3,09E+02 | 2,57E+01 | 1,73E+03 | 2,41E+02 | 1,97E+00 | MND | MND | MND | MND | MND | MND | MND | 9,92E-02 | 1,49E+02 | 1,35E+02 | 3,65E+00 | -2,80E+02 |
| Secondary materials | kg | 4,17E-01 | 1,32E-01 | 9,55E-03 | 5,58E-01 | 1,03E-01 | 6,61E-04 | MND | MND | MND | MND | MND | MND | MND | 8,47E-06 | 6,32E-02 | 5,60E-02 | 9,17E-04 | -3,15E-01 |
| Renew. secondary fuels | MJ | 7,55E-03 | 1,67E-03 | 3,14E-05 | 9,25E-03 | 1,31E-03 | 1,06E-05 | MND | MND | MND | MND | MND | MND | MND | 5,20E-08 | 8,03E-04 | 1,46E-04 | 1,90E-05 | -2,17E-03 |
| Non-ren. secondary fuels | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Use of net fresh water | $m^3$ | 1,14E+00 | 4,57E-02 | 1,44E-02 | 1,20E+00 | 3,57E-02 | 1,23E-03 | MND | MND | MND | MND | MND | MND | MND | 6,37E-05 | 2,20E-02 | 8,91E-03 | 3,79E-03 | -8,42E-01 |

*8) PER = Primary energy resources.*

## 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 | 7,61E+00 | 5,23E-01 | 2,34E-01 | 8,37E+00 | 4,09E-01 | 8,78E-03 | MND | MND | MND | MND | MND | MND | MND | 8,94E-04 | 2,52E-01 | 1,50E-01 | 4,03E-03 | -2,12E+00 |
| Non-hazardous waste | kg | 1,58E+02 | 9,69E+00 | 8,02E+01 | 2,47E+02 | 7,57E+00 | 2,55E-01 | MND | MND | MND | MND | MND | MND | MND | 1,90E-02 | 4,66E+00 | 2,04E+00 | 9,20E-02 | -3,93E+01 |
| Radioactive waste | kg | 9,13E-04 | 6,59E-05 | 5,30E-06 | 9,84E-04 | 5,15E-05 | 1,04E-06 | MND | MND | MND | MND | MND | MND | MND | 2,24E-09 | 3,17E-05 | 1,46E-05 | 5,59E-07 | -5,41E-04 |

## 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 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 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 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 2,35E+03 | 0,00E+00 | 0,00E+00 |
| Materials for energy rec | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 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 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 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 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 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 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

## ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

| 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 $CO_2e$ | 2,73E+02 | 2,12E+01 | 2,23E+00 | 2,97E+02 | 1,65E+01 | 3,13E-01 | MND | MND | MND | MND | MND | MND | MND | 8,62E-03 | 1,02E+01 | 1,02E+01 | 1,47E-01 | -2,27E+01 |
| Ozone depletion Pot. | kg $CFC_{-11}e$ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Acidification | kg $SO_2e$ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Eutrophication | kg $PO_4^3e$ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| POCP (“smog”) | kg $C_2H_4e$ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| ADP-elements | kg Sbe | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| ADP-fossil | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

## 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[9)] | kg $CO_2e$ | 2,74E+02 | 2,13E+01 | 2,22E+00 | 2,97E+02 | 1,66E+01 | 3,14E-01 | MND | MND | MND | MND | MND | MND | MND | 8,58E-03 | 1,02E+01 | 1,03E+01 | 1,49E-01 | -2,28E+01 |

*9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.*

# THIRD-PARTY VERIFICATION STATEMENT

## VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

## THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
24.07.2025