



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Medium Density Fiberboard (MDF), High Density Fiberboard (HDF)
Clarion Boards LLC



EPD HUB, HUB- 3720

Publishing date 27 July 2025, last updated on 27 July 2025, valid until 26 July 2030.

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.



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GENERAL INFORMATION

MANUFACTURER

| | |
|-----------------|---|
| Manufacturer | Clarion Boards LLC |
| Address | 143 Fiberboard Ave, Shippenville, PA 16254, United States |
| Contact details | sustainability@kronospan.co.uk |
| Website | https://kronospan.com/en_US/ |

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 |
| Parent EPD number | - |
| Scope of the EPD | Cradle to gate with options, A4-A5, and modules C1-C4, D |
| EPD author | Wei-Li Hung |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification |
| EPD verifier | Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited |

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.

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PRODUCT

| | |
|--|--|
| Product name | Medium Density Fiberboard (MDF), High Density Fiberboard (HDF) |
| Additional labels | - |
| Product reference | - |
| Place(s) of raw material origin | United States |
| Place of production | Clarion, Pennsylvania, USA |
| Place(s) of installation and use | United States |
| Period for data | October 2023 - September 2024 |
| Averaging in EPD | No grouping |
| Variation in GWP-fossil for A1-A3 (%) | 0% |
| GTIN (Global Trade Item Number) | - |
| NOBB (Norwegian Building Product Database) | - |
| A1-A3 Specific data (%) | 0 |

ENVIRONMENTAL DATA SUMMARY

| | |
|---|------------------|
| Declared unit | 1 m ³ |
| Declared unit mass | 837 kg |
| GWP-fossil, A1-A3 (kgCO ₂ e) | 791 |
| GWP-total, A1-A3 (kgCO ₂ e) | -437 |
| Secondary material, inputs (%) | 0.15 |
| Secondary material, outputs (%) | 100 |
| Total energy use, A1-A3 (kWh) | 7670 |
| Net freshwater use, A1-A3 (m ³) | 8.42 |

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Clarion Boards is a subsidiary of Kronospan Inc., one of the leading manufacturers of wood-based panel products. The medium density fiberboard (MDF) and high density fiberboard (HDF) we produce is used in construction, furniture manufacturing, and the DIY industry.

PRODUCT DESCRIPTION

MDF and HDF are engineered boards produced from resin-bonded wood fibers under high pressure and heat. They have high stability and low thickness swelling. MDF and HDF are non-load-bearing products designed for interior use in dry conditions.

Sanded to a very fine surface, MDF and HDF are suitable for various coatings, including veneering, laminating, painting, and varnishing. Due to their good mechanical performance, our MDF and HDF can also be used as a building material, serving as a substitute for timber in non-load-bearing walls, ceilings, and partitions. Additionally, they are ideal for furniture components, packaging, and frameworks for upholstered furniture, kitchen door designs, and cladding.

With a density of 705–960 kg/m³ and thicknesses ranging from 6 to 30 mm, our MDF and HDF provide flexibility for a wide range of applications.

Further information can be found at: https://kronospan.com/en_US/

PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin |
|-----------------------|----------------|-----------------|
| Metals | - | - |
| Minerals | - | - |
| Fossil materials | 1-2% | United States |
| Bio-based materials | 98-99% | United States |

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

| | |
|--|--------|
| Biogenic carbon content in product, kg C | 490.12 |
| Biogenic carbon content in packaging, kg C | 1.18 |

FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|------------------------|------------------|
| Declared unit | 1 m ³ |
| Mass per declared unit | 837 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 | |
| × | × | × | × | × | MND | MND | MND | MND | MND | MND | MND | × | × | × | × | × | × |
| 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 |

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.

Raw material/energy supply (A1):

Extraction and processing of raw materials including: wood chips, resin, and other chemicals. Production loss is considered at this stage.

Transportation to manufacturing site (A2):

- Transportation of the wood chips to the Clarion site.
- Transportation of chemicals and packaging from manufacturer/supplier to the Clarion site.

Manufacturing (A3):

Ancillary water is sourced from and returned to the local water network in accordance with local standards and agreement.

Electricity is produced on site by sourcing natural gas and using GE Jenbacher gas engines. Supplemental electricity is sourced from the local grid. Heat is provided primarily by our onsite biomass boiler (fueled with site waste) and supplemented by natural gas. Packaging materials include PET banding and lath made from reject board.

The proper manufacturing of the boards and treatment of waste generated from the manufacturing process up to the end-of waste state during manufacturing is included in module A3.

Manufacturing waste includes wood dust, which is either incinerated for energy recovery or sent to landfill. The transport distance for this waste is considered to be 66 km by truck.

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.

Module A4:

This module considers 1,168 km of truck transport to site (diesel-powered, EURO 6, 40 metric tons total load, 61% utilization) from average delivery distance within the timeframe.

Module A5:

Installation has been excluded as a factor because, typically, this product undergoes reprocessing by our customers to make final construction products. There are boundless variations in processing methods, auxiliary materials, energy consumption, wastage, etc.

Packaging materials:

Wood and plastic packaging are assumed to follow the world scenario based on Ecoinvent v3.10.

PRODUCT USE AND MAINTENANCE (B1-B7)

Not included. Air, soil, and water impacts during the use phase have not been included in the study.

PRODUCT END OF LIFE (C1-C4, D)**Module C1:**

Manual dismantling → no loads in C1 have been generated.

Module C2:

Transport to waste treatment site after dismantling using EURO 6 truck average (50 km assumed).

Module C3:

The end-of-life scenario assumes full incineration of the product with energy recovery.

Module C4:

Within the EoL scenario, no disposal to landfill will occur, thus this module will show zero values.

Module D:

The benefits from the incineration of raw MDF and HDF are calculated and stated in module D.

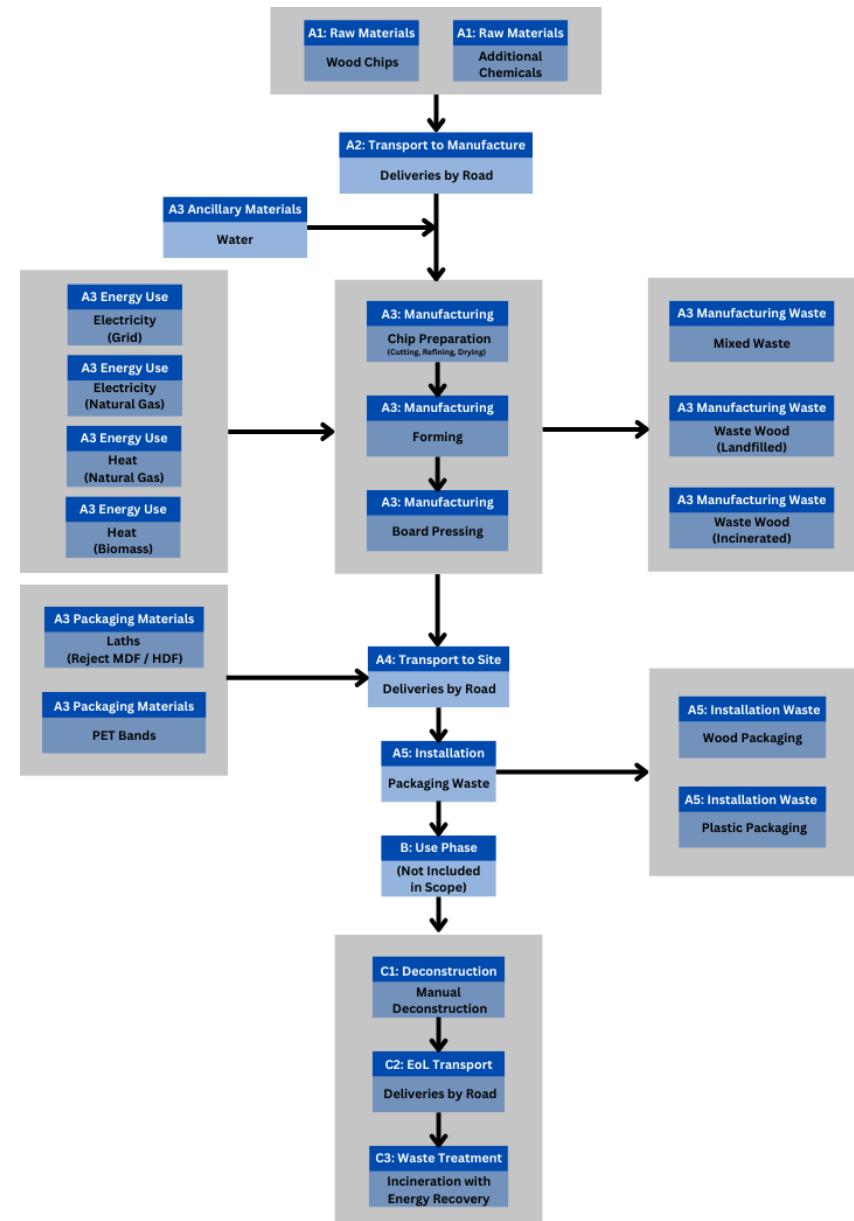
Packaging materials:

Wood and plastic packaging are assumed to follow the world scenario based on Ecoinvent v3.10.

MANUFACTURING PROCESS

Clarion Boards uses wood chips, which are introduced into a heating and drying process to produce fiber. The fiber then enters a continuous pressing cycle, where it is combined with glue (PMDI) and other chemicals, such as release agents, wax, and dye.

Once the fiber is pressed to the desired thickness, the sheets are cut to length and stored for cooling. After cooling, they are trimmed, sanded, stacked, and strapped for distribution.



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 | Allocated by mass or volume |
| Ancillary materials | Allocated by mass or volume |
| Manufacturing energy and waste | Allocated by mass or volume |

PRODUCT & MANUFACTURING SITES GROUPING

| | |
|--------------------------------------|----------------|
| Type of grouping | No grouping |
| Grouping method | Not applicable |
| Variation in GWP-fossil for A1-A3, % | - |

This EPD is product and factory specific.

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

| 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 ₂ e | -1.63E+03 | 1.27E+01 | 1.18E+03 | -4.37E+02 | 1.06E+02 | 7.01E+00 | MND | 0.00E+00 | 4.51E+00 | 2.74E+03 | 0.00E+00 | -1.94E+02 |
| GWP – fossil | kg CO ₂ e | 1.69E+02 | 1.27E+01 | 6.09E+02 | 7.91E+02 | 1.06E+02 | 1.18E-01 | MND | 0.00E+00 | 4.50E+00 | 1.30E+01 | 0.00E+00 | -1.93E+02 |
| GWP – biogenic | kg CO ₂ e | -1.80E+03 | 1.99E-04 | 5.68E+02 | -1.23E+03 | 2.39E-02 | 6.89E+00 | MND | 0.00E+00 | 1.02E-03 | 2.73E+03 | 0.00E+00 | -5.05E-01 |
| GWP – LULUC | kg CO ₂ e | 9.63E-01 | 5.70E-03 | 1.39E-01 | 1.11E+00 | 4.72E-02 | 9.36E-05 | MND | 0.00E+00 | 2.02E-03 | 3.59E-03 | 0.00E+00 | -7.20E-01 |
| Ozone depletion pot. | kg CFC-11e | 1.47E-06 | 1.88E-07 | 8.42E-06 | 1.01E-05 | 1.56E-06 | 1.74E-09 | MND | 0.00E+00 | 6.65E-08 | 1.46E-07 | 0.00E+00 | -5.44E-06 |
| Acidification potential | mol H ⁺ e | 1.02E+00 | 4.34E-02 | 5.82E-01 | 1.64E+00 | 3.60E-01 | 4.66E-04 | MND | 0.00E+00 | 1.54E-02 | 1.35E-01 | 0.00E+00 | -1.28E+00 |
| EP-freshwater ²⁾ | kg Pe | 1.24E-01 | 9.92E-04 | 3.21E-02 | 1.57E-01 | 8.22E-03 | 2.65E-05 | MND | 0.00E+00 | 3.51E-04 | 5.63E-03 | 0.00E+00 | -1.68E-01 |
| EP-marine | kg Ne | 3.36E-01 | 1.43E-02 | 2.14E-01 | 5.65E-01 | 1.18E-01 | 8.78E-04 | MND | 0.00E+00 | 5.05E-03 | 7.16E-02 | 0.00E+00 | -3.25E-01 |
| EP-terrestrial | mol Ne | 3.62E+00 | 1.55E-01 | 2.09E+00 | 5.87E+00 | 1.29E+00 | 1.76E-03 | MND | 0.00E+00 | 5.49E-02 | 6.88E-01 | 0.00E+00 | -3.24E+00 |
| POCP ("smog") ³⁾ | kg NMVOCe | 1.20E+00 | 6.40E-02 | 1.38E+00 | 2.64E+00 | 5.30E-01 | 6.91E-04 | MND | 0.00E+00 | 2.26E-02 | 1.73E-01 | 0.00E+00 | -9.64E-01 |
| ADP-minerals & metals ⁴⁾ | kg Sbe | 2.99E-04 | 3.55E-05 | 3.73E-04 | 7.08E-04 | 2.94E-04 | 2.69E-07 | MND | 0.00E+00 | 1.26E-05 | 2.66E-05 | 0.00E+00 | -4.37E-04 |
| ADP-fossil resources | MJ | 2.73E+03 | 1.85E+02 | 9.96E+03 | 1.29E+04 | 1.53E+03 | 1.64E+00 | MND | 0.00E+00 | 6.54E+01 | 1.15E+02 | 0.00E+00 | -4.46E+03 |
| Water use ⁵⁾ | m ³ e depr. | 1.73E+01 | 9.13E-01 | 5.89E+01 | 7.72E+01 | 7.56E+00 | 9.60E-03 | MND | 0.00E+00 | 3.23E-01 | 2.73E+01 | 0.00E+00 | -1.21E+02 |

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

| 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 | 6.22E-05 | 1.28E-06 | 3.44E-06 | 6.69E-05 | 1.06E-05 | 1.14E-08 | MND | 0.00E+00 | 4.51E-07 | 1.51E-06 | 0.00E+00 | -3.26E-05 |
| Ionizing radiation ⁶⁾ | kBq | 9.28E+00 | 1.61E-01 | 1.67E+01 | 2.61E+01 | 1.33E+00 | 2.37E-03 | MND | 0.00E+00 | 5.69E-02 | 1.31E-01 | 0.00E+00 | -1.22E+02 |
| Ecotoxicity (freshwater) | CTUe | 5.63E+02 | 2.61E+01 | 5.26E+02 | 1.11E+03 | 2.17E+02 | 4.63E-01 | MND | 0.00E+00 | 9.25E+00 | 8.82E+01 | 0.00E+00 | -5.37E+02 |
| Human toxicity, cancer | CTUh | 5.40E-08 | 2.10E-09 | 5.21E-08 | 1.08E-07 | 1.74E-08 | 2.37E-11 | MND | 0.00E+00 | 7.43E-10 | 2.42E-08 | 0.00E+00 | -6.67E-08 |
| Human tox. non-cancer | CTUh | 1.61E-06 | 1.20E-07 | 1.35E-06 | 3.08E-06 | 9.92E-07 | 1.33E-09 | MND | 0.00E+00 | 4.23E-08 | 1.63E-06 | 0.00E+00 | -2.48E-06 |
| SQP ⁷⁾ | - | 2.14E+05 | 1.86E+02 | 6.55E+02 | 2.15E+05 | 1.54E+03 | 2.26E+00 | MND | 0.00E+00 | 6.58E+01 | 3.23E+01 | 0.00E+00 | -5.31E+03 |

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 | 1.82E+04 | 2.53E+00 | -3.00E+03 | 1.52E+04 | 2.10E+01 | -3.92E+01 | MND | 0.00E+00 | 8.96E-01 | -1.42E+04 | 0.00E+00 | -3.41E+03 |
| Renew. PER as material | MJ | 1.70E+04 | 0.00E+00 | -2.83E+03 | 1.41E+04 | 0.00E+00 | -2.41E+01 | MND | 0.00E+00 | 0.00E+00 | -1.41E+04 | 0.00E+00 | 0.00E+00 |
| Total use of renew. PER | MJ | 3.51E+04 | 2.53E+00 | -5.83E+03 | 2.93E+04 | 2.10E+01 | -6.33E+01 | MND | 0.00E+00 | 8.96E-01 | -2.83E+04 | 0.00E+00 | -3.41E+03 |
| Non-re. PER as energy | MJ | 2.31E+03 | 1.85E+02 | 9.96E+03 | 1.24E+04 | 1.53E+03 | 1.94E-01 | MND | 0.00E+00 | 6.54E+01 | 1.15E+02 | 0.00E+00 | -4.46E+03 |
| Non-re. PER as material | MJ | 4.25E+02 | 0.00E+00 | -6.65E+01 | 3.58E+02 | 0.00E+00 | -4.99E+00 | MND | 0.00E+00 | 0.00E+00 | -3.53E+02 | 0.00E+00 | 0.00E+00 |
| Total use of non-re. PER | MJ | 2.73E+03 | 1.85E+02 | 9.89E+03 | 1.28E+04 | 1.53E+03 | -4.80E+00 | MND | 0.00E+00 | 6.54E+01 | -2.38E+02 | 0.00E+00 | -4.46E+03 |
| Secondary materials | kg | 1.25E+00 | 7.87E-02 | 1.29E+00 | 2.63E+00 | 6.52E-01 | 7.19E-04 | MND | 0.00E+00 | 2.78E-02 | 2.70E-01 | 0.00E+00 | -5.96E-01 |
| Renew. secondary fuels | MJ | 3.20E-02 | 9.99E-04 | 3.26E-03 | 3.63E-02 | 8.28E-03 | 1.02E-05 | MND | 0.00E+00 | 3.53E-04 | 6.38E-04 | 0.00E+00 | -2.44E-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 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Use of net fresh water | m ³ | 7.14E+00 | 2.73E-02 | 1.25E+00 | 8.42E+00 | 2.26E-01 | -7.68E-03 | MND | 0.00E+00 | 9.66E-03 | 1.68E-01 | 0.00E+00 | -3.66E+00 |

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 | 1.08E+01 | 3.13E-01 | 8.88E+00 | 2.00E+01 | 2.59E+00 | 3.40E-03 | MND | 0.00E+00 | 1.11E-01 | 5.41E+00 | 0.00E+00 | -1.04E+01 |
| Non-hazardous waste | kg | 2.21E+02 | 5.79E+00 | 1.25E+03 | 1.48E+03 | 4.80E+01 | 1.06E+01 | MND | 0.00E+00 | 2.05E+00 | 8.59E+02 | 0.00E+00 | -8.24E+02 |
| Radioactive waste | kg | 2.46E-03 | 3.94E-05 | 4.01E-03 | 6.51E-03 | 3.26E-04 | 5.87E-07 | MND | 0.00E+00 | 1.39E-05 | 3.27E-05 | 0.00E+00 | -3.14E-02 |

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 | 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 | 3.73E-01 | MND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for energy rec | kg | 0.00E+00 | 0.00E+00 | 1.44E+02 | 1.44E+02 | 0.00E+00 | 4.30E-03 | MND | 0.00E+00 | 0.00E+00 | 8.37E+02 | 0.00E+00 | 0.00E+00 |
| Exported energy | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.40E-02 | 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 | 2.70E-02 | 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 | 3.70E-02 | MND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

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 ₂ e | 1.69E+02 | 1.27E+01 | 6.08E+02 | 7.90E+02 | 1.05E+02 | 2.38E-01 | MND | 0.00E+00 | 4.48E+00 | 1.29E+01 | 0.00E+00 | -1.93E+02 |
| Ozone depletion Pot. | kg CFC-11e | 1.21E-06 | 1.50E-07 | 6.74E-06 | 8.10E-06 | 1.24E-06 | 1.39E-09 | MND | 0.00E+00 | 5.31E-08 | 1.21E-07 | 0.00E+00 | -5.35E-06 |
| Acidification | kg SO ₂ e | 7.76E-01 | 3.32E-02 | 4.44E-01 | 1.25E+00 | 2.75E-01 | 3.52E-04 | MND | 0.00E+00 | 1.17E-02 | 9.43E-02 | 0.00E+00 | -1.03E+00 |
| Eutrophication | kg PO ₄ ³⁻ e | 2.14E-01 | 8.08E-03 | 1.31E-01 | 3.53E-01 | 6.70E-02 | 1.53E-04 | MND | 0.00E+00 | 2.86E-03 | 3.62E-02 | 0.00E+00 | -1.96E-01 |
| POCP ("smog") | kg C ₂ H ₄ e | 8.92E-02 | 2.96E-03 | 5.91E-02 | 1.51E-01 | 2.45E-02 | 5.60E-05 | MND | 0.00E+00 | 1.05E-03 | 7.49E-03 | 0.00E+00 | -8.88E-02 |
| ADP-elements | kg Sbe | 2.94E-04 | 3.46E-05 | 3.54E-04 | 6.83E-04 | 2.87E-04 | 2.62E-07 | MND | 0.00E+00 | 1.23E-05 | 2.21E-05 | 0.00E+00 | -4.33E-04 |
| ADP-fossil | MJ | 2.59E+03 | 1.82E+02 | 9.72E+03 | 1.25E+04 | 1.51E+03 | 1.60E+00 | MND | 0.00E+00 | 6.45E+01 | 1.13E+02 | 0.00E+00 | -2.31E+03 |

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 ₂ e | 1.70E+02 | 1.27E+01 | 6.09E+02 | 7.92E+02 | 1.06E+02 | 1.18E-01 | MND | 0.00E+00 | 4.51E+00 | 1.30E+01 | 0.00E+00 | -1.94E+02 |

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.

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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
27.07.2025

