
# ENVIRONMENTAL PRODUCT DECLARATION

## IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Adjufix sleeve
ITW Construction Products

**EPD HUB, HUB-2803**
Publishing date 7 February 2025, last updated on 7 February 2025, valid until 7 February 2030.

Created with One Click LCA

# GENERAL INFORMATION

## MANUFACTURER

| | |
|---|---|
| Manufacturer | ITW Construction Products |
| Address | Gl. Banegaardsvej 25, 5500 Middelfart, Denmark |
| Contact details | order@itwconstruction.se |
| Website | https://www.adjufix.com/ |

## EPD STANDARDS, SCOPE AND VERIFICATION

| | |
|---|---|
| Program operator | EPD Hub, hub@epdhub.com |
| Reference standard | EN 15804+A2:2019 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 | ITW Construction Products, Anders Nissen |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025:<br>☐ Internal verification ☑ External verification |
| EPD verifier | Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited |

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 | Adjufix sleeve |
| Additional labels | - |
| Product reference | FRAME FIXING SLEEVE |
| Place of production | Sweden, Lituania |
| Period for data | Calendar year 2023 |
| Averaging in EPD | No averaging |
| Variation in GWP-fossil for A1-A3 | - |

## ENVIRONMENTAL DATA SUMMARY

| | |
|---|---|
| **Declared unit** | 1 kg |
| **Declared unit mass** | 1 kg |
| **GWP-fossil, A1-A3 ($kgCO_2e$)** | 3.00 |
| **GWP-total, A1-A3 ($kgCO_2e$)** | 2.93 |
| **Secondary material, inputs (%)** | 4.3 |
| **Secondary material, outputs (%)** | 55.8 |
| **Total energy use, A1-A3 (kWh)** | 16.4 |
| **Net freshwater use, A1-A3 ($m^3$)** | 0.12 |

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

ITW Construction Products UK/Nordics is a division of ITW (Illinois Tool Works Ltd), a multinational industrial business operating across multiple industries. Since ITW's founding more than 100 years ago, it has become one of the world's leading diversified manufacturers of specialized industrial equipment, consumables, and related service businesses. The foundation of our company is the ITW Business Model, a unique and differentiated set of core capabilities and business practices that comprises three key elements: ITW's 80/20 Front to Back Process, customer-back innovation and a decentralized entrepreneurial culture. At ITW Construction Products UK/Nordics we are suppliers of innovative, engineered fastening systems and related consumables and software. These products are uniquely specified for a variety of materials, including wood, concrete and steel.

## PRODUCT DESCRIPTION

Product OverviewThe Adjufix sleeve is a specialized component designed for the installation of windows and doors, manufactured with precision for use in modern construction projects. These sleeves are engineered to provide both immediate ease of installation and long-term adjustability, making them an indispensable tool for professional builders and renovators. Main ComponentsAdjufix sleeves are crafted from premium zinc alloy, chosen for its robustness, corrosion resistance, and ability to maintain integrity over time. This material ensures the sleeves remain reliable in both indoor and outdoor environments, even after years of use. Use CasesAdjufix sleeves are specifically designed for the precise installation of windows and doors. Their key feature is the ability to easily adjust the alignment of installed elements, not just during the initial installation phase but also many years into the future. This adjustability is particularly beneficial in scenarios where settling or structural shifts occur, ensuring windows and doors continue to function seamlessly without the need for significant alterations. Technical Details Material: High-strength zinc alloy with enhanced corrosion resistance. Benefits: Facilitates accurate alignment of windows and doors during installation. Allows for long-term adjustments to maintain functionality and fit.Applications: Suitable for residential, commercial, and industrial projects.Compliance: Designed in accordance with construction standards to ensure safety, durability, and performance.

Further information can be found at https://www.adjufix.com/.

## PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin |
|---|---|---|
| Metals | 100 | EU |
| Minerals | - | - |
| Fossil materials | - | - |
| Bio-based materials | - | - |

## 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 | 0.03 |

## FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|---|---|
| Declared unit | 1 kg |
| Mass per declared unit | 1 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 | 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.

The manufacturing process begins with zinc alloy sourced from different suppliers and die cast into the main component. Packaging materials include plastic blister packs, cartonnage cardboard, corrugated cardboard boxes, and wooden pallets with pallet frames.There are no ancillary materials related to diecasting in the production. The process is powered by high-voltage electricity, which consists of 68% energy from hydro reservoir power, 25% from wind power, and 6% from Photovoltaic.Zinc scraps generated during production are recycled in production.

## 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 distance is defined in the EPD. The finished products are transported and transferred to different locations in Nordic and Baltic countries. The average distance to the site is 5,0km/kg by sea and 7,0km/kg by truck. A 100% vehicle capacity utilization volume factor is assumed, meaning all shipments are considered full loads. Although actual load factors can vary, this assumption simplifies calculations since transportation emissions contribute minimally to the overall impact. Products, including sea transport, are part of their delivery route. These shipments are typically consolidated with other cargo on shared freight vessels rather than using dedicated transport solely for our products. This shared arrangement minimizes emissions per unit by distributing them across multiple loads on the same journey.Lastly, empty return trips are not accounted for, as it is assumed that the transport provider uses return journeys to fulfill other clients' needs, further optimizing resource use. Proper packaging also ensures that products arrive intact without losses due to transit.

The installation process energy is assumed to be done with cordless screwdrivers at 22 Wh / kg of products, which is accounted for in the document. Associated losses are considered negligible, with the process assumed to use pneumatic, gas, or manual nailing methods. Packaging treatment is also considered in A5. Treatment scenarios are based on Eurostat and other European organization data.

## PRODUCT USE AND MAINTENANCE (B1-B7)

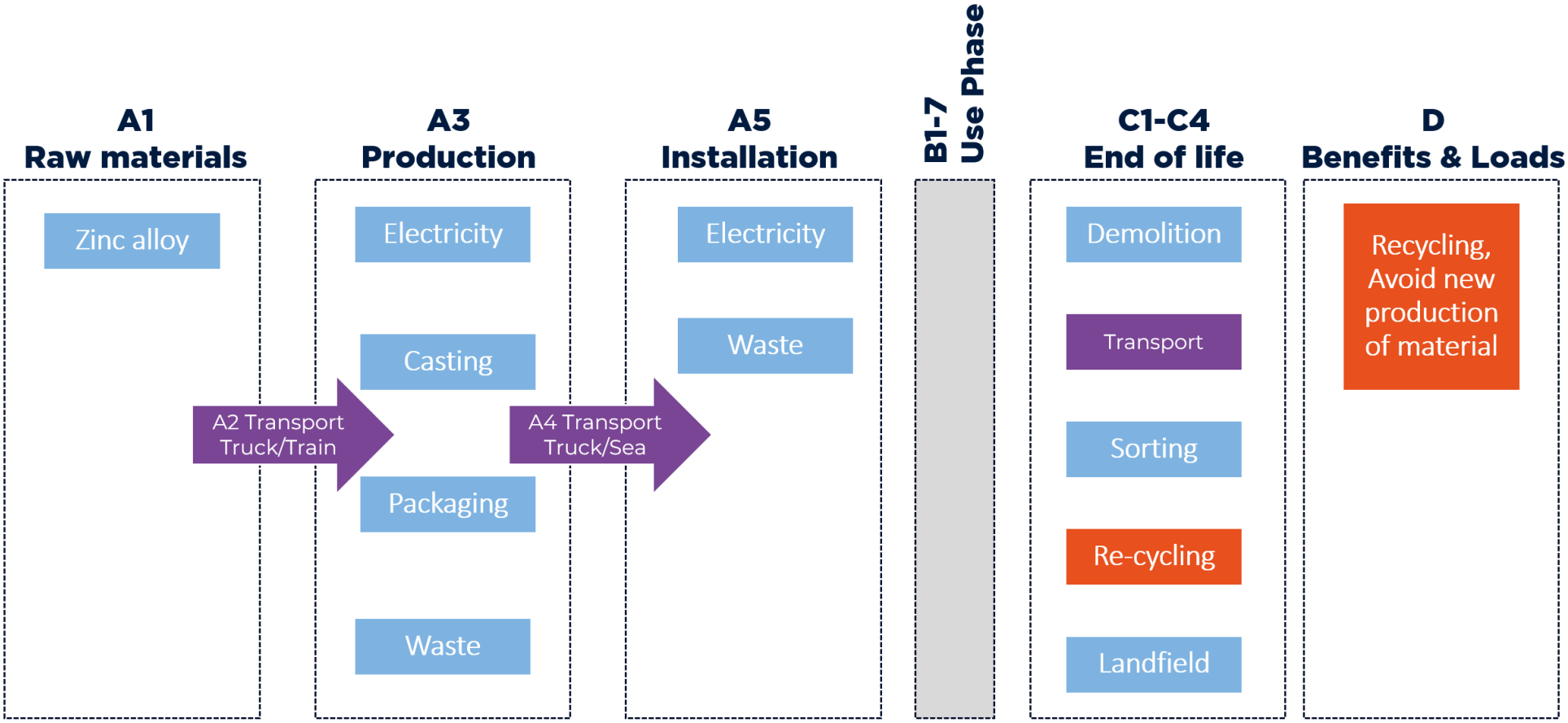
This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

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

Demolition is assumed to consume 0.01 kWh/kg of product. The source of energy is diesel fuel used by construction machines (C1). It is assumed that 100% of the waste is collected and transported to the waste treatment center. Transportation distance to treatment is assumed as 250 km for recycling and 50 km for landfill, transportation method is assumed to be lorry (C2). Approximately 57% of the sleeve is assumed to be recycled based on the International Zinc Association (C3). It is assumed that the remaining 43 % of the sleeve is taken to landfill for final disposal (C4). Due to the recycling process, the end-of-life product is converted into recycled metal, while the wooden pallets are reused whenever possible, and the packaging film and cardboard boxes are recycled as par the industry standard (World Steel Association (pg19, 2020) PEFCR on thermal insulation Conservative assumption) (D).

# 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.

## 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 | No allocation |
| Packaging material | Allocated by mass or volume |
| Ancillary materials | Not applicable |
| Manufacturing energy and waste | Allocated by mass or volume |

## AVERAGES AND VARIABILITY

| | |
|---|---|
| Type of average | No averaging |
| Averaging method | Not applicable |
| Variation in GWP-fossil for A1-A3 | - |

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

## 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 and One Click LCA databases as sources of environmental data.

# ENVIRONMENTAL IMPACT DATA

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| 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 | 2,96E+00 | 7,69E-03 | -4,03E-02 | 2,93E+00 | 1,45E-03 | 1,48E-01 | MND | MND | MND | MND | MND | MND | MND | 3,61E-03 | 1,77E-02 | 1,29E-02 | 2,69E-03 | -1,38E+00 |
| GWP – fossil | kg $CO_2$e | 2,94E+00 | 7,69E-03 | 4,09E-02 | 2,99E+00 | 1,45E-03 | 3,89E-02 | MND | MND | MND | MND | MND | MND | MND | 3,60E-03 | 1,77E-02 | 1,29E-02 | 2,68E-03 | -1,33E+00 |
| GWP – biogenic | kg $CO_2$e | 0,00E+00 | 0,00E+00 | -1,09E-01 | -1,09E-01 | 0,00E+00 | 1,09E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -4,46E-02 |
| GWP – LULUC | kg $CO_2$e | 1,83E-02 | 3,23E-06 | 2,77E-02 | 4,60E-02 | 5,31E-07 | 4,85E-04 | MND | MND | MND | MND | MND | MND | MND | 3,69E-07 | 7,90E-06 | 1,59E-05 | 1,53E-06 | -9,53E-03 |
| Ozone depletion pot. | kg CFC-$_{11}$e | 4,20E-08 | 1,36E-10 | 2,13E-09 | 4,43E-08 | 2,86E-11 | 5,99E-10 | MND | MND | MND | MND | MND | MND | MND | 5,52E-11 | 2,61E-10 | 1,73E-10 | 7,78E-11 | -1,96E-08 |
| Acidification potential | mol $H^+$e | 2,92E-02 | 2,24E-05 | 2,45E-04 | 2,95E-02 | 4,49E-06 | 3,47E-04 | MND | MND | MND | MND | MND | MND | MND | 3,25E-05 | 6,02E-05 | 1,53E-04 | 1,90E-05 | -1,48E-02 |
| EP-freshwater[2)] | kg Pe | 4,78E-03 | 5,69E-07 | 1,64E-05 | 4,80E-03 | 9,58E-08 | 5,53E-05 | MND | MND | MND | MND | MND | MND | MND | 1,04E-07 | 1,37E-06 | 8,30E-06 | 2,21E-07 | -2,44E-03 |
| EP-marine | kg Ne | 6,98E-03 | 6,77E-06 | 7,21E-05 | 7,06E-03 | 1,09E-06 | 8,88E-05 | MND | MND | MND | MND | MND | MND | MND | 1,51E-05 | 1,98E-05 | 3,39E-05 | 7,25E-06 | -3,57E-03 |
| EP-terrestrial | mol Ne | 7,60E-02 | 7,35E-05 | 6,70E-04 | 7,68E-02 | 1,19E-05 | 8,62E-04 | MND | MND | MND | MND | MND | MND | MND | 1,65E-04 | 2,15E-04 | 3,84E-04 | 7,92E-05 | -3,89E-02 |
| POCP ("smog")[3)] | kg NMVOCe | 2,03E-02 | 3,52E-05 | 2,35E-04 | 2,06E-02 | 6,03E-06 | 2,37E-04 | MND | MND | MND | MND | MND | MND | MND | 4,93E-05 | 8,87E-05 | 1,14E-04 | 2,84E-05 | -1,03E-02 |
| ADP-minerals & metals[4)] | kg Sbe | 1,52E-03 | 2,17E-08 | 8,87E-07 | 1,52E-03 | 4,71E-09 | 1,54E-05 | MND | MND | MND | MND | MND | MND | MND | 1,29E-09 | 4,92E-08 | 9,13E-07 | 4,26E-09 | -8,32E-04 |
| ADP-fossil resources | MJ | 4,50E+01 | 1,13E-01 | 5,93E-01 | 4,57E+01 | 2,03E-02 | 6,49E-01 | MND | MND | MND | MND | MND | MND | MND | 4,72E-02 | 2,56E-01 | 1,73E-01 | 6,59E-02 | -2,05E+01 |
| Water use[5)] | $m^3$e depr. | 4,22E+00 | 5,71E-04 | 1,25E+00 | 5,46E+00 | 9,96E-05 | 5,99E-02 | MND | MND | MND | MND | MND | MND | MND | 1,18E-04 | 1,27E-03 | 3,11E-03 | 1,90E-04 | -2,14E+00 |

*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, PEF

| 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 | 1,74E-07 | 7,60E-10 | 4,45E-09 | 1,79E-07 | 1,05E-10 | 2,09E-09 | MND | MND | MND | MND | MND | MND | MND | 9,25E-10 | 1,77E-09 | 2,08E-09 | 4,33E-10 | -6,58E-08 |
| Ionizing radiation[6)] | kBq U235e | 6,97E-01 | 1,17E-04 | 3,54E-03 | 7,00E-01 | 2,57E-05 | 1,18E-02 | MND | MND | MND | MND | MND | MND | MND | 2,09E-05 | 2,23E-04 | 1,47E-03 | 4,14E-05 | -3,04E-01 |
| Ecotoxicity (freshwater) | CTUe | 4,35E+02 | 1,47E-02 | 4,62E-01 | 4,36E+02 | 2,66E-03 | 4,41E+00 | MND | MND | MND | MND | MND | MND | MND | 2,60E-03 | 3,62E-02 | 1,01E-01 | 5,53E-03 | -2,37E+02 |
| Human toxicity, cancer | CTUh | 1,34E-08 | 1,27E-12 | 5,16E-11 | 1,35E-08 | 2,46E-13 | 1,38E-10 | MND | MND | MND | MND | MND | MND | MND | 3,71E-13 | 2,91E-12 | 1,15E-11 | 4,95E-13 | -5,85E-09 |
| Human tox. non-cancer | CTUh | 3,24E-07 | 7,34E-11 | 9,19E-10 | 3,25E-07 | 1,26E-11 | 3,43E-09 | MND | MND | MND | MND | MND | MND | MND | 5,87E-12 | 1,66E-10 | 7,82E-10 | 1,14E-11 | -1,73E-07 |
| SQP[7)] | - | 2,08E+01 | 1,14E-01 | 9,93E+00 | 3,09E+01 | 1,19E-02 | 3,67E-01 | MND | MND | MND | MND | MND | MND | MND | 3,30E-03 | 2,58E-01 | 3,36E-01 | 1,30E-01 | -1,20E+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.

## 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 | 9,02E+00 | 1,70E-03 | 4,41E+00 | 1,34E+01 | 3,49E-04 | -6,06E-01 | MND | MND | MND | MND | MND | MND | MND | 2,99E-04 | 3,51E-03 | 3,22E-02 | 6,36E-04 | -4,38E+00 |
| Renew. PER as material | MJ | 0,00E+00 | 0,00E+00 | 9,91E-01 | 9,91E-01 | 0,00E+00 | -9,91E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 4,10E-01 |
| Total use of renew. PER | MJ | 9,02E+00 | 1,70E-03 | 5,40E+00 | 1,44E+01 | 3,49E-04 | -1,60E+00 | MND | MND | MND | MND | MND | MND | MND | 2,99E-04 | 3,51E-03 | 3,22E-02 | 6,36E-04 | -3,97E+00 |
| Non-re. PER as energy | MJ | 4,50E+01 | 1,13E-01 | 5,95E-01 | 4,57E+01 | 2,03E-02 | 6,49E-01 | MND | MND | MND | MND | MND | MND | MND | 4,72E-02 | 2,56E-01 | 1,73E-01 | 6,59E-02 | -2,05E+01 |
| Non-re. PER as material | MJ | 0,00E+00 | 0,00E+00 | 2,68E-04 | 2,68E-04 | 0,00E+00 | -2,68E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,50E-02 |
| Total use of non-re. PER | MJ | 4,50E+01 | 1,13E-01 | 5,95E-01 | 4,57E+01 | 2,03E-02 | 6,48E-01 | MND | MND | MND | MND | MND | MND | MND | 4,72E-02 | 2,56E-01 | 1,73E-01 | 6,59E-02 | -2,05E+01 |
| Secondary materials | kg | 4,30E-02 | 4,87E-05 | 9,92E-03 | 5,29E-02 | 9,45E-06 | 5,77E-04 | MND | MND | MND | MND | MND | MND | MND | 1,96E-05 | 1,09E-04 | 2,11E-04 | 1,66E-05 | 6,33E-01 |
| Renew. secondary fuels | MJ | 1,54E-04 | 6,16E-07 | 9,64E-04 | 1,12E-03 | 1,16E-07 | 1,16E-05 | MND | MND | MND | MND | MND | MND | MND | 5,12E-08 | 1,39E-06 | 9,80E-06 | 3,43E-07 | -2,38E-05 |
| 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 | $m^3$ | 9,93E-02 | 1,68E-05 | 2,10E-02 | 1,20E-01 | 2,72E-06 | 1,30E-03 | MND | MND | MND | MND | MND | MND | MND | 3,12E-06 | 3,79E-05 | 9,18E-05 | 6,85E-05 | -4,88E-02 |

*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 | 4,29E-01 | 1,79E-04 | 3,77E-03 | 4,33E-01 | 2,95E-05 | 4,97E-03 | MND | MND | MND | MND | MND | MND | MND | 5,25E-05 | 4,34E-04 | 1,13E-03 | 7,28E-05 | -1,10E-02 |
| Non-hazardous waste | kg | 1,01E+01 | 3,43E-03 | 1,04E-01 | 1,02E+01 | 6,15E-04 | 2,28E-01 | MND | MND | MND | MND | MND | MND | MND | 7,15E-04 | 8,03E-03 | 4,08E-02 | 1,66E-03 | -4,85E+00 |
| Radioactive waste | kg | 1,80E-04 | 2,92E-08 | 1,40E-06 | 1,81E-04 | 6,42E-09 | 3,04E-06 | MND | MND | MND | MND | MND | MND | MND | 5,18E-09 | 5,55E-08 | 3,76E-07 | 1,02E-08 | -7,86E-05 |

## 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 | 1,48E-02 | 1,48E-02 | 0,00E+00 | 2,61E-02 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 5,70E-01 | 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 | 2,28E-02 | 2,28E-02 | 0,00E+00 | 6,66E-02 | 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 $CO_2e$ | 2,97E+00 | 7,64E-03 | 6,13E-02 | 3,04E+00 | 1,44E-03 | 4,19E-02 | MND | MND | MND | MND | MND | MND | MND | 3,59E-03 | 1,76E-02 | 1,28E-02 | 2,66E-03 | -1,34E+00 |
| Ozone depletion Pot. | kg $CFC_{-11}e$ | 3,48E-08 | 1,08E-10 | 7,46E-10 | 3,56E-08 | 2,28E-11 | 4,86E-10 | MND | MND | MND | MND | MND | MND | MND | 4,37E-11 | 2,08E-10 | 1,43E-10 | 6,17E-11 | -1,63E-08 |
| Acidification | kg $SO_2e$ | 2,33E-02 | 1,73E-05 | 1,37E-04 | 2,35E-02 | 3,60E-06 | 2,78E-04 | MND | MND | MND | MND | MND | MND | MND | 2,29E-05 | 4,60E-05 | 1,23E-04 | 1,41E-05 | -1,18E-02 |
| Eutrophication | kg $PO_4^3e$ | 4,20E-03 | 4,26E-06 | 5,10E-05 | 4,26E-03 | 7,29E-07 | 5,20E-05 | MND | MND | MND | MND | MND | MND | MND | 5,34E-06 | 1,12E-05 | 1,79E-05 | 4,48E-06 | -2,14E-03 |
| POCP (“smog”) | kg $C_2H_4e$ | 1,34E-03 | 1,63E-06 | 1,29E-05 | 1,35E-03 | 3,10E-07 | 1,66E-05 | MND | MND | MND | MND | MND | MND | MND | 1,71E-06 | 4,10E-06 | 7,31E-06 | 1,33E-06 | -6,62E-04 |
| ADP-elements | kg Sbe | 1,52E-03 | 2,12E-08 | 6,72E-07 | 1,53E-03 | 4,60E-09 | 1,54E-05 | MND | MND | MND | MND | MND | MND | MND | 1,26E-09 | 4,80E-08 | 9,10E-07 | 4,18E-09 | -8,32E-04 |
| ADP-fossil | MJ | 3,44E+01 | 1,12E-01 | 3,32E-01 | 3,48E+01 | 1,99E-02 | 4,55E-01 | MND | MND | MND | MND | MND | MND | MND | 4,68E-02 | 2,53E-01 | 1,47E-01 | 6,52E-02 | -1,61E+01 |

# 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
07.02.2025