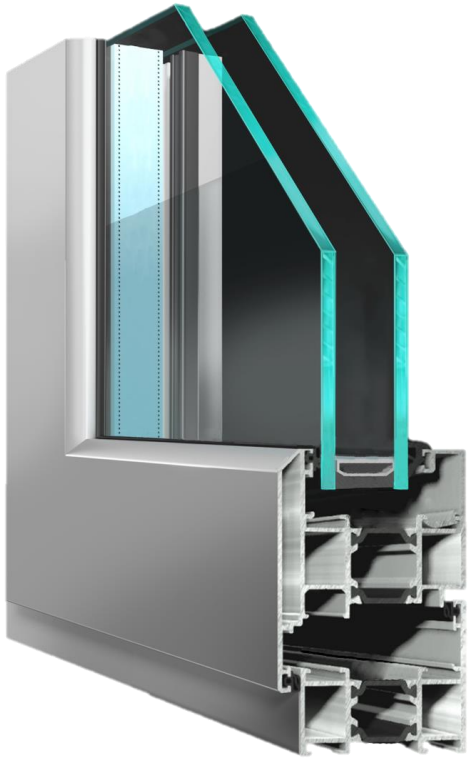
# ENVIRONMENTAL PRODUCT DECLARATION

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

ST60 Window System
APA Façade Systems Ltd



**EPD HUB, EPDHUB-0120**
Publishing date 22 September 2022, last updated date 22 September 2027

Created with One Click LCA

# GENERAL INFORMATION

## MANUFACTURER

| | |
|---|---|
| Manufacturer | APA Façade Systems Ltd |
| Address | Unit 12, Parkmore industrial Estate, Longmile Road, Dublin 12, Ireland. D12VXH9 |
| Contact details | info@apafacadesystems.com |
| Website | https://www.apafacadesystems.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 1.0, 1 Feb 2022 |
| 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 | Danijela Marosan APA Façade Systems |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025:<br>☐ Internal certification ☑ External verification |
| EPD verifier | E.A as an authorized verifier acting for EPD Hub |

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 | ST60 Window System |
| Additional labels | - |
| Product reference | ST60 |
| Place of production | Dublin, Ireland |
| Period for data | October 2020 - October 2021 |
| Averaging in EPD | No averaging |

## ENVIRONMENTAL DATA SUMMARY

| | |
|---|---|
| **Declared unit** | 1.23 m x 1.48 m |
| **Declared unit mass** | 48.862 kg |
| **GWP-fossil, A1-A3 (kgCO2e)** | 237.0 |
| **GWP-total, A1-A3 (kgCO2e)** | 238.0 |
| **Secondary material, inputs (%)** | 30.5 |
| **Secondary material, outputs (%)** | 55.6 |
| **Total energy use, A1-A3 (kWh)** | 907.0 |
| **Total water use, A1-A3 (m3e)** | 3.54 |

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

APA Facade Systems is a leading manufacturer of high-performance aluminium profiles for windows, doors and facade systems including curtain walling, louvre, and solar shading.

APA Façade Systems' high-performance profiles are frequently used within many sectors including educational, residential, healthcare, public authority, retail, and commercial construction. The innovative interchangeable-part design – the result of extensive R&D and rigorous testing – makes them a favourite with fabricators due to the speed of assembly and the reduction in stock holdings all of which helps to reduce wastage and maximise cost efficiency.

All our products reflect our values and our commitment to environmentally sensitive design.

## PRODUCT DESCRIPTION

The ST60 is a high-performance window system designed for use in used in commercial, institutional, and residential developments. The ST60 window system is manufactured and tested in accordance with I.S EN 14351-1:2006 +A2:2016 Window and doors - product standard, performance characteristics.

The frame of the window is 60mm in depth and consists of aluminium, polyamide, and EPDM gaskets for sealing. The ST60 can facilitate a range of glazing units between 28mm-32mm.

A large array of frame sizes and arrangements are fabricated at APA Façade Systems production facility and Dublin and transported to the customers site where double glazed units are added. As various glass types and weights are used an indictive double glazed unit has been used in this EPD.

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

## PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass- % | Material origin |
|---|---|---|
| Metals | 37.1 | Ireland, England, Italy |
| Minerals | 56.4 | Ireland |
| Fossil materials | 6.5 | Ireland, England, Spain |
| 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 | 0.0013 |

## FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|---|---|
| Declared unit | 1.23 m x 1.48 m |
| Mass per declared unit | 48.862 kg |

## 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 | Deconstr./demol. | 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 product is made of a mixture of primary and secondary metals, double-glazed glass, and plastic parts. The materials are transported to APA Façade Systems production facility. The main manufacturing processes include combining composite profiles, painting of profiles, fabrication of window section & final assembly followed by packaging and sending to installation site on A-frames. The manufacturing process requires electricity and fuels for the different equipment as well as heating.

## 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 according to the PCR. The average distance of transportation from production plant to building site is assumed as 200 km and the transportation method is assumed to be lorry. The vehicle capacity utilization volume factor is assumed to be 100 % which means full load. In reality, it may vary but as the role of transportation emissions in total results is small, the variation in load is assumed to be negligible. Empty returns are not considered as it is assumed that the return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as products are packaged properly.

Installation includes the energy use and material consumption as well as the packaging waste generated. There is no loss on-site during construction activities. The window products in this EPD are painted and surface treated production and not at the building site. Therefore, there are only 2 items left in this module,
1) Energy use during installation. This varies depending on the floor, type of building and several other unknown parameters, and is therefore omitted in the calculation.
2) Waste treatment of packaging waste has also been included in module A5.

## 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.

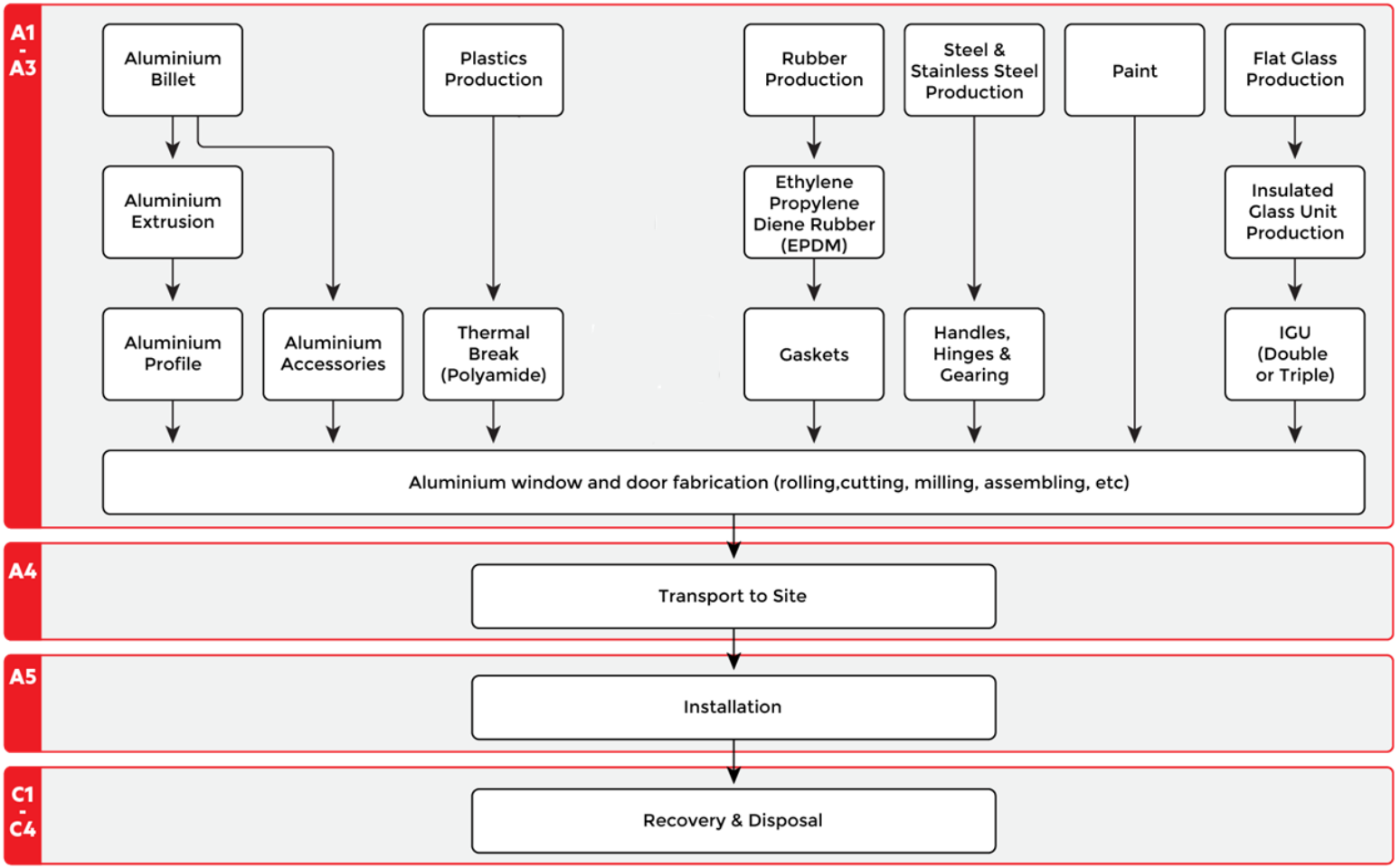
## PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in the demolition process is assumed to be negligible. It is assumed that the waste is collected as mixed construction waste and transported to the waste treatment centre. The transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2).

Per, window & doors PCR I.S EN 17213:2020 (Annex B), 30% of glass and 95% of metals go for recycling and 95% of plastics go for incineration with energy recovery. Module C3 accounts for energy and resource inputs for sorting and treating these waste streams for recycling and incineration with energy recovery.

Per window & doors PCR I.S. EN 17213:2020 (Annex B), 70% of glass waste, 5% of metals, and 5% of plastic waste goes to landfills. The benefits and loads of incineration and recycling are included in Module 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 materials | No allocation |
| 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. Ecoinvent and One Click LCA databases were used 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 | 2,32E2 | 3,43E0 | 2,46E0 | 2,38E2 | 1,59E0 | 4,18E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 3,99E-1 | 1,25E1 | 2,02E0 | -3,07E1 |
| GWP – fossil | kg $CO_2$e | 2,31E2 | 3,43E0 | 2,45E0 | 2,37E2 | 1,61E0 | 2,99E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 3,99E-1 | 1,23E1 | 2,02E0 | -3E1 |
| GWP – biogenic | kg $CO_2$e | 5,62E-1 | -6,19E-3 | 9,21E-3 | 5,65E-1 | 8,63E-4 | 1,19E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 2,15E-4 | 1,72E-1 | 2,18E-3 | -7,76E-2 |
| GWP – LULUC | kg $CO_2$e | 2,52E-1 | 1,83E-3 | 3,12E-3 | 2,57E-1 | 5,8E-4 | 1,14E-5 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,44E-4 | 9,4E-3 | 9,39E-5 | -5,33E-1 |
| Ozone depletion pot. | kg $CFC_{-11}$e | 1,31E-5 | 7,37E-7 | 1,17E-7 | 1,4E-5 | 3,65E-7 | 4,38E-9 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 9,08E-8 | 1,02E-6 | 6,78E-8 | -3,83E-6 |
| Acidification potential | mol $H^+$e | 1,5E0 | 1,69E-2 | 9,29E-3 | 1,52E0 | 4,61E-3 | 1,34E-4 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,15E-3 | 1,57E-1 | 2,01E-3 | -2,61E-1 |
| EP-freshwater[2)] | kg Pe | 4,33E-3 | 3,7E-5 | 6,36E-5 | 4,43E-3 | 1,37E-5 | 4,33E-7 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 3,39E-6 | 1,23E-3 | 3,66E-6 | -1,57E-3 |
| EP-marine | kg Ne | 2,35E-1 | 3,74E-3 | 1,63E-3 | 2,41E-1 | 9,16E-4 | 4,49E-5 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 2,28E-4 | 1,38E-2 | 6,95E-4 | -3,33E-2 |
| EP-terrestrial | mol Ne | 2,53E0 | 4,17E-2 | 1,8E-2 | 2,59E0 | 1,02E-2 | 4,78E-4 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 2,54E-3 | 1,77E-1 | 7,66E-3 | -3,86E-1 |
| POCP ("smog")[3)] | kg NMVOCe | 7,13E-1 | 1,32E-2 | 4,72E-3 | 7,31E-1 | 3,91E-3 | 1,6E-4 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 9,72E-4 | 5,05E-2 | 2,17E-3 | -1,3E-1 |
| ADP-minerals & metals[4)] | kg Sbe | 6,97E-3 | 1,43E-4 | 1,55E-5 | 7,12E-3 | 4,43E-5 | 7,16E-7 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,1E-5 | 7,5E-4 | 2,42E-6 | -4,13E-4 |
| ADP-fossil resources | MJ | 2,67E3 | 5,04E1 | 2,63E1 | 2,75E3 | 2,43E1 | 3,5E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 6,03E0 | 1,37E2 | 5,11E0 | -4,66E2 |
| Water use[5)] | $m^3$e depr. | 8,72E1 | 1,98E-1 | 3,46E-1 | 8,78E1 | 7,94E-2 | 3,29E-3 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,97E-2 | 8,24E0 | 2,24E-1 | -4,05E0 |

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

## 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 | 3,45E2 | 1,08E0 | 5,72E0 | 3,52E2 | 3,48E-1 | 1,12E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 8,64E-2 | 1,87E1 | 7,9E-2 | -1,47E2 |
| Renew. PER as material | MJ | 7,98E-2 | 0E0 | 0E0 | 7,98E-2 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Total use of renew. PER | MJ | 3,45E2 | 1,08E0 | 5,72E0 | 3,52E2 | 3,48E-1 | 1,12E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 8,64E-2 | 1,87E1 | 7,9E-2 | -1,47E2 |
| Non-re. PER as energy | MJ | 2,84E3 | 5,04E1 | 2,54E1 | 2,91E3 | 2,43E1 | 3,5E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 6,03E0 | 1,37E2 | 5,11E0 | -4,66E2 |
| Non-re. PER as material | MJ | 3,24E1 | 0E0 | 9,56E-1 | 3,34E1 | 0E0 | -9,56E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | -3,08E1 | 0E0 | 0E0 |
| Total use of non-re. PER | MJ | 2,87E3 | 5,04E1 | 2,63E1 | 2,95E3 | 2,43E1 | -6,06E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 6,03E0 | 1,06E2 | 5,11E0 | -4,66E2 |
| Secondary materials | kg | 1,47E1 | 0E0 | 1,54E-1 | 1,49E1 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 0E0 | 0E0 | 1,29E1 |
| Renew. secondary fuels | MJ | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Non-ren. secondary fuels | MJ | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Use of net fresh water | $m^3$ | 3,52E0 | 8,92E-3 | 1,3E-2 | 3,54E0 | 4,19E-3 | 8,34E-5 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,04E-3 | 7,49E-2 | 6,1E-3 | -2,14E-1 |

*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 | 1,35E1 | 7,03E-2 | 1,54E-1 | 1,37E1 | 2,5E-2 | 1,18E-3 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 6,21E-3 | 0E0 | 3,99E-2 | -6,13E0 |
| Non-hazardous waste | kg | 1,8E2 | 3,14E0 | 3,18E0 | 1,87E2 | 1,72E0 | 4,06E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 4,28E-1 | 0E0 | 2,11E1 | -6,55E1 |
| Radioactive waste | kg | 5,26E-2 | 3,38E-4 | 1,24E-4 | 5,3E-2 | 1,66E-4 | 2,09E-6 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 4,13E-5 | 0E0 | 3,03E-5 | -2,29E-3 |

## 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 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Materials for recycling | kg | 1,01E0 | 0E0 | 1,19E0 | 2,2E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 2,55E1 | 0E0 | 0E0 |
| Materials for energy rec | kg | 2,65E-2 | 0E0 | 0E0 | 2,65E-2 | 0E0 | 4,23E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 1,67E0 | 0E0 | 0E0 |
| Exported energy | MJ | 1,19E0 | 0E0 | 0E0 | 1,19E0 | 0E0 | 6,98E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 0E0 | 2,25E1 | 0E0 | 0E0 |

## 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 $CO_2$e | 2,14E2 | 3,4E0 | 2,42E0 | 2,2E2 | 1,59E0 | 3,12E-2 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 3,96E-1 | 1,21E1 | 2,02E0 | -2,98E1 |
| Ozone depletion Pot. | kg $CFC_{-11}$e | 1,25E-5 | 5,88E-7 | 9,49E-8 | 1,32E-5 | 2,91E-7 | 3,54E-9 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 7,22E-8 | 8,55E-7 | 5,41E-8 | -3,61E-6 |
| Acidification | kg $SO_2$e | 1,1E0 | 1,28E-2 | 7,95E-3 | 1,12E0 | 3,24E-3 | 9,2E-5 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 8,05E-4 | 1,41E-1 | 1,05E-3 | -1,67E-1 |
| Eutrophication | kg $PO_4^3$e | 2E-1 | 2,38E-3 | 4,13E-3 | 2,06E-1 | 6,7E-4 | 5,91E-5 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,66E-4 | 5,64E-2 | 3,23E-4 | -6E-2 |
| POCP (“smog”) | kg $C_2H_4$e | 6,33E-2 | 5,71E-4 | 3,59E-4 | 6,42E-2 | 1,94E-4 | 6,33E-6 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 4,82E-5 | 5,78E-3 | 5,58E-5 | -1,68E-2 |
| ADP-elements | kg Sbe | 6,97E-3 | 1,43E-4 | 1,55E-5 | 7,12E-3 | 4,43E-5 | 7,16E-7 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 1,1E-5 | 7,5E-4 | 2,42E-6 | -4,13E-4 |
| ADP-fossil | MJ | 2,67E3 | 5,04E1 | 2,63E1 | 2,75E3 | 2,43E1 | 3,5E-1 | MND | MND | MND | MND | MND | MND | MND | 0E0 | 6,03E0 | 1,37E2 | 5,11E0 | -4,66E2 |

# 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.

Elisabet Amat as an authorized verifier acting for EPD Hub Limited
22.09.2022

VERIFIED ISO 14025