



ENVIRONMENTAL PRODUCT DECLARATION

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

Timber Staircases

Stairway Joinery Ltd

EPD HUB, HUB-1697

Published on 24.07.2024, last updated on 09.08.2024, valid until 24.07.2029.



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Stairway Joinery Ltd
Address	Unit 3, Washington Rd, West Wilts Trading Estate, Westbury Wilts, BA13 4JP, UK
Contact details	sales@stairwayjoineryltd.co.uk
Website	https://www.stairwayjoinery.co.uk/

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
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Adeleh Ghodsizadeh (Blue Marble Environmental Partnerships Ltd.)
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

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	Timber Staircases
Additional labels	-
Product reference	-
Place of production	Westbury, United Kingdom
Period for data	2023 (Calendar Year)
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	+16.9% / -13.8%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Unit
Declared unit mass	144.8 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	137
GWP-total, A1-A3 (kgCO ₂ e)	-98.1
Secondary material, inputs (%)	0.76
Secondary material, outputs (%)	83
Total energy use, A1-A3 (kWh)	1380
Net fresh water use, A1-A3 (m ³)	2.58

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Stairway Joinery Ltd. is a major staircase manufacturer that produces staircases for all the major house builders nationally and bespoke staircases for that specific individual one-off.

Stairway Joinery was established in 1988 and has been producing quality staircases for new or existing homes for over 35 years.

PRODUCT DESCRIPTION

Staircases are constructed of many species of timber from MDF, Ply, Softwoods and Hardwoods, depending on the client's specification and requirements.

All staircases are CNC Machined and assembled and wedged with D3 PVA adhesive.

All staircases are built to comply with Part K building regulations and NHBC requirements.

Further information can be found at <https://www.stairwayjoinery.co.uk/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0.2	Global
Minerals	0	-
Fossil materials	2.1	Europe
Bio-based materials	97.7	Global

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	63.8
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	144.8 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	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	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 comprises a combination of softwood, medium density fibreboard (MDF) and plywood with timber grown, processed, treated and sourced from various global locations and suppliers. Primers and adhesives are sourced from European suppliers. Stainless steel screws are procured from global suppliers. (A1)

All the raw materials are transferred to the manufacturing site where the main product is produced. A combination of freight lorry, Euro 5 (various sizes) and container ships are used for raw material transportation. (A2)

Manufacturing involves cutting, sanding and assembly processes carried out by Stairway Joinery. Waste wood from the manufacturing process is used to heat the manufacturing facility. (A3)

No packaging is required for the product. (A3)

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 product transportation from manufacturer to installation site requires diesel as fuel (A4). No packaging is used for delivery; therefore no packaging waste leaves the system.

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)

In the end-of-life stage of the product, manual deconstruction is assumed. (C1)

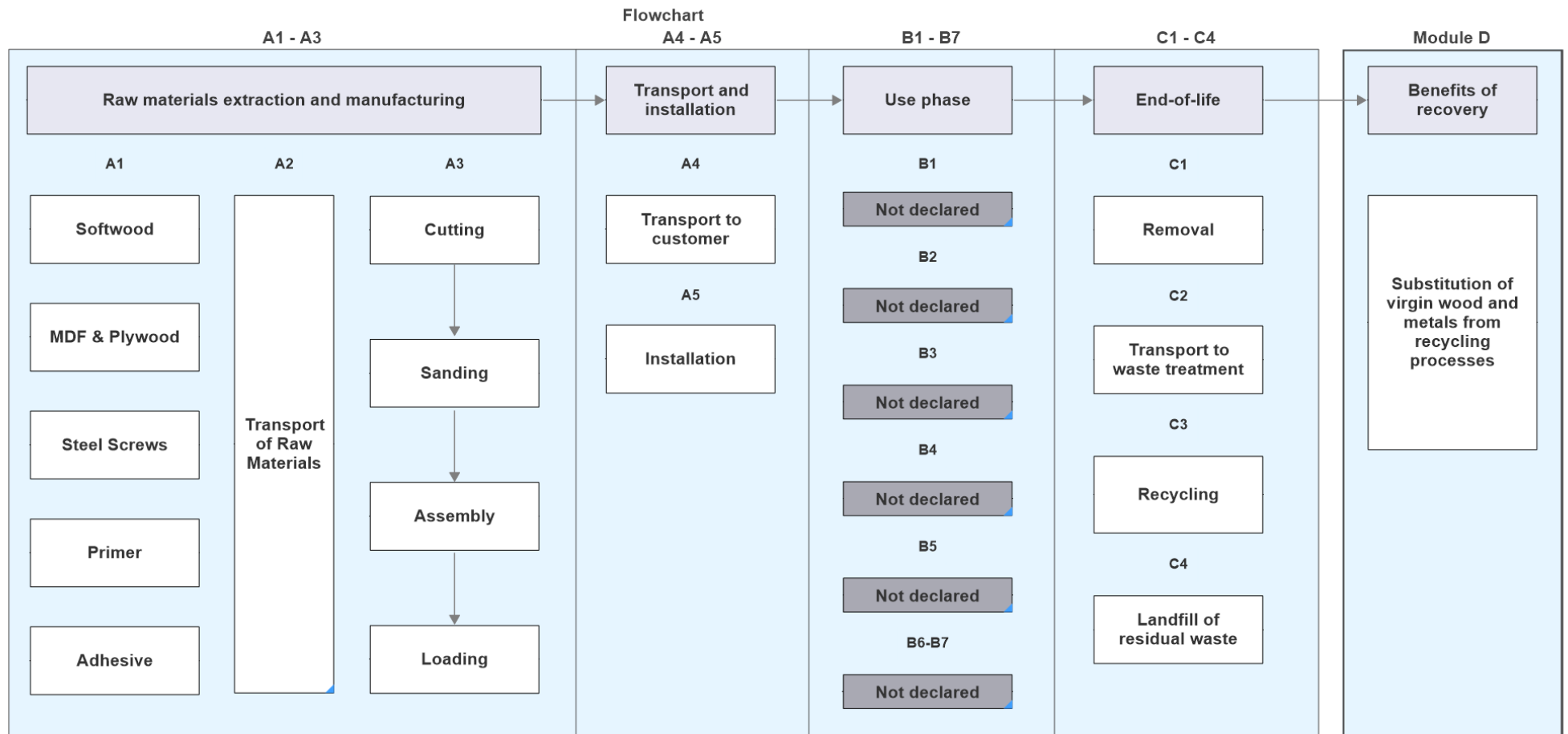
It is assumed that 80% of the wood is considered to be recycled after first being chipped and the remaining 20% is assumed to reach landfill. Stored biogenic carbon is released back to the atmosphere at end-of-life. (C3/C4)

96% of the steel content is assumed to be recycled and the rest will go to landfill. (C3/C4).

The transportation distance to recycling site and landfill is covered via >32 tonne lorry with an estimated distance of 50km (C2).



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	Not applicable
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	+16.9% / -13.8%

This EPD applies to timber staircases. In order to create a representative average, the following products were considered:

Amberley (base case)

Weight = 144.788 kg

Bedminster

Weight = 109.504 kg

Chew

Weight = 161.812 kg

Letchworth and Ludlow

Weight = 182.785 kg

For the base case product, within units A1-A3, 97% of GWP fossil impacts are associated with the raw materials, therefore this has been the main comparator for this average. The products all share an equivalent purpose (staircase).

Products within this range have very similar raw material composition (softwood, MDF, plywood, primer, adhesive and steel fixings).

For the range, the variance against the base case GWP fossil is shown below:

MAX GWP (fossil) value: 152 kg CO₂ e

MIN GWP (fossil) value: 112 kg CO₂ e

Base Case Product GWP (fossil) value: 130 kg CO₂ e

Variance from base case product (max +/- 50%):

+16.9 % Max

-13.8 % Min

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 v3.8, Plastics Europe, Federal LCA Commons 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	-1.55E+02	4.16E+01	1.56E+01	-9.81E+01	5.41E-01	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	7.05E-01	1.88E+02	5.33E+01	-2.70E+00
GWP – fossil	kg CO ₂ e	8.95E+01	4.16E+01	6.19E+00	1.37E+02	5.41E-01	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	7.04E-01	9.96E-01	3.22E-01	-2.68E+00
GWP – biogenic	kg CO ₂ e	-2.49E+02	0.00E+00	9.38E+00	-2.40E+02	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0.00E+00	1.87E+02	5.29E+01	0.00E+00
GWP – LULUC	kg CO ₂ e	4.45E+00	2.62E-02	8.59E-03	4.48E+00	2.00E-04	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.60E-04	2.25E-03	3.34E-04	-1.36E-02
Ozone depletion pot.	kg CFC ₁₁ e	1.01E-05	8.60E-06	4.04E-07	1.91E-05	1.24E-07	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.62E-07	5.12E-08	9.60E-08	-1.99E-07
Acidification potential	mol H ⁺ e	7.04E-01	9.75E-01	3.54E-02	1.71E+00	2.29E-03	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.98E-03	5.42E-03	2.72E-03	-1.65E-02
EP-freshwater ²⁾	kg Pe	5.71E-03	2.13E-04	1.40E-04	6.07E-03	4.43E-06	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	5.77E-06	1.02E-04	6.20E-06	-1.53E-04
EP-marine	kg Ne	1.86E-01	2.43E-01	1.19E-02	4.41E-01	6.81E-04	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	8.86E-04	7.73E-04	1.79E-03	-3.52E-03
EP-terrestrial	mol Ne	1.98E+00	2.70E+00	1.37E-01	4.81E+00	7.51E-03	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	9.78E-03	8.75E-03	1.01E-02	-3.92E-02
POCP (“smog”) ³⁾	kg NMVOCe	6.05E-01	7.08E-01	3.31E-02	1.35E+00	2.40E-03	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	3.13E-03	2.45E-03	3.62E-03	-1.40E-02
ADP-minerals & metals ⁴⁾	kg Sbe	9.79E-04	8.16E-05	1.84E-05	1.08E-03	1.27E-06	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.65E-06	4.23E-06	1.09E-06	-7.12E-05
ADP-fossil resources	MJ	1.55E+03	5.51E+02	1.58E+02	2.26E+03	8.13E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.06E+01	2.06E+01	7.36E+00	-2.91E+01
Water use ⁵⁾	m ³ e depr.	1.01E+02	1.96E+00	1.34E+00	1.05E+02	3.64E-02	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	4.73E-02	5.54E-01	4.41E-02	-5.49E-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, 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	1.44E-05	2.20E-06	2.63E-07	1.69E-05	6.24E-08	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	8.12E-08	2.18E-08	5.44E-08	-2.31E-07
Ionizing radiation ⁶⁾	kBq U235e	1.13E+01	2.58E+00	5.45E+00	1.93E+01	3.87E-02	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	5.04E-02	5.47E-01	3.55E-02	-7.75E-02
Ecotoxicity (freshwater)	CTUe	3.06E+03	4.04E+02	2.02E+02	3.66E+03	7.31E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	9.51E+00	1.31E+01	7.48E+00	-8.41E+01
Human toxicity, cancer	CTUh	6.29E-07	2.20E-08	2.90E-09	6.54E-07	1.80E-10	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.34E-10	6.27E-10	2.40E-10	-4.51E-08

Human tox. non-cancer	CTUh	2.18E-06	3.17E-07	1.09E-07	2.60E-06	7.24E-09	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	9.42E-09	1.32E-08	7.59E-09	-6.78E-08
SQP ⁷⁾	-	2.16E+04	2.30E+02	5.83E+01	2.19E+04	9.36E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1.22E+01	3.47E+00	1.77E+01	-2.06E+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	2.79E+03	4.89E+00	2.85E+01	2.82E+03	9.16E-02	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.19E-01	3.58E+00	1.36E-01	-3.21E+02
Renew. PER as material	MJ	2.18E+03	0.00E+00	-8.14E+01	2.10E+03	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0.00E+00	-1.64E+03	-4.64E+02	0.00E+00
Total use of renew. PER	MJ	4.97E+03	4.89E+00	-5.29E+01	4.92E+03	9.16E-02	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.19E-01	-1.64E+03	-4.64E+02	-3.21E+02
Non-re. PER as energy	MJ	1.36E+03	5.52E+02	1.58E+02	2.07E+03	8.13E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.06E+01	2.06E+01	7.36E+00	-2.91E+01
Non-re. PER as material	MJ	1.89E+02	0.00E+00	-5.96E+00	1.83E+02	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0.00E+00	-1.37E+02	-4.62E+01	0.00E+00
Total use of non-re. PER	MJ	1.55E+03	5.52E+02	1.52E+02	2.25E+03	8.13E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.06E+01	-1.16E+02	-3.89E+01	-2.91E+01
Secondary materials	kg	1.09E+00	2.26E-01	1.37E-02	1.33E+00	2.26E-03	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.94E-03	7.89E-03	2.63E-03	2.91E-01
Renew. secondary fuels	MJ	9.28E+01	1.17E-03	4.75E-05	9.28E+01	2.28E-05	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.96E-05	2.12E-05	1.01E-04	-9.49E-04
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	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	2.51E+00	4.80E-02	3.06E-02	2.58E+00	1.05E-03	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.37E-03	1.73E-02	7.88E-03	-1.80E-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	9.99E+00	7.59E-01	3.53E-01	1.11E+01	1.08E-02	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.40E-02	8.52E-02	0.00E+00	-2.33E+00
Non-hazardous waste	kg	1.99E+02	8.44E+00	5.23E+00	2.13E+02	1.77E-01	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.30E-01	4.62E+00	2.99E+01	-3.30E+00
Radioactive waste	kg	4.59E-03	3.82E-03	1.37E-03	9.78E-03	5.44E-05	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	7.08E-05	1.48E-04	0.00E+00	-7.56E-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	MNR	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	MNR	0.00E+00	1.20E+02	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	5.57E+00	5.57E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	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	MNR	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 ₂ e	9.14E+01	4.12E+01	6.12E+00	1.39E+02	5.36E-01	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	6.97E-01	9.85E-01	2.25E+00	-2.62E+00
Ozone depletion Pot.	kg CFC ₁₁ e	8.59E-06	6.82E-06	3.54E-07	1.58E-05	9.86E-08	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.28E-07	4.43E-08	7.62E-08	-1.66E-07
Acidification	kg SO ₂ e	5.51E-01	7.79E-01	2.63E-02	1.36E+00	1.78E-03	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	2.32E-03	4.57E-03	2.06E-03	-1.34E-02
Eutrophication	kg PO ₄ ³ e	2.83E-01	9.19E-02	8.81E-03	3.84E-01	4.05E-04	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	5.28E-04	3.59E-03	8.61E-02	-4.05E-03
POCP ("smog")	kg C ₂ H ₄ e	5.48E-02	2.06E-02	1.41E-03	7.68E-02	6.95E-05	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	9.04E-05	1.97E-04	5.00E-04	-1.04E-03
ADP-elements	kg Sbe	9.58E-04	7.98E-05	1.85E-05	1.06E-03	1.23E-06	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.60E-06	4.22E-06	1.05E-06	-7.11E-05
ADP-fossil	MJ	1.55E+03	5.51E+02	1.58E+02	2.25E+03	8.13E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1.06E+01	2.06E+01	7.36E+00	-2.91E+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 compliance 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
24.07.2024

