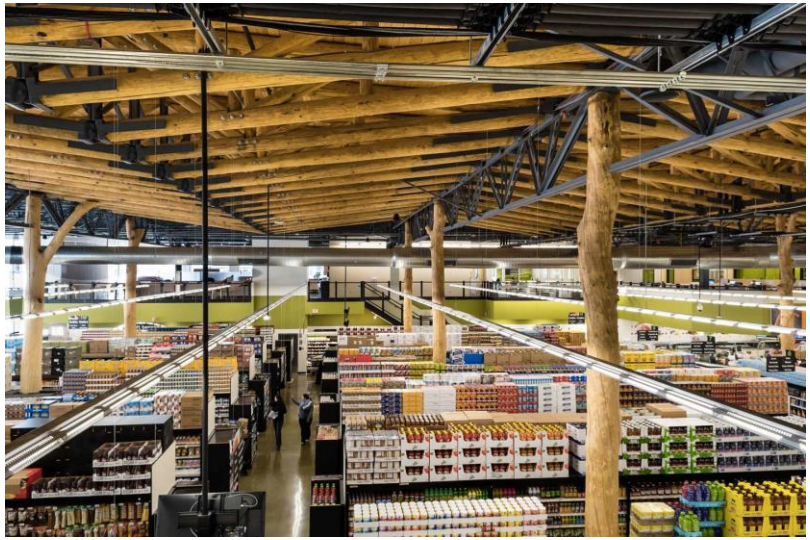
ENVIRONMENTAL PRODUCT DECLARATION

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

Structural Round Timber
Original Mass Timber Maine



EPD HUB, HUB-0079
Publishing date 14 July 2022, last updated date 14 July 2022, valid until 14 January 2024

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GENERAL INFORMATION

MANUFACTURER

Manufacturer	Original Mass Timber Maine
Address	PO Box 910, Ashland, ME 04732, USA
Contact details	info@originalmasstimber.com
Website	https://originalmasstimber.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	Design phase EPD
Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD author	Aurimas Bukauskas on behalf of Original Mass Timber Maine
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	E.A, 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	Structural Round Timber
Additional labels	-
Product reference	-
Place of production	Maine, USA
Period for data	2020
Averaging in EPD	No averaging

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m^3 of Structural Round Timber
Declared unit mass	794.56 kg
GWP-fossil, A1-A3 (kgCO2e)	5.25E1
GWP-total, A1-A3 (kgCO2e)	-1.04E3
Secondary material, inputs (%)	100
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	5.9E2
Total water use, A1-A3 (m3e)	3.73E-1

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

PRODUCT DESCRIPTION

Structural Round Timbers (SRT) are pre-engineered wood components made from un-milled timbers, a by-product of sustainable forest management. To produce SRT, 4-24 inch diameter trees are debarked and cut to enable connections with other structural elements. A borate treatment is applied for pest and mildew control. The trees are left unfinished or optionally coated with a finish of the customers choice. SRT is definable as Heavy Timber within the International Building Code.

SRT is 50% stronger than milled lumber of the same cross-sectional properties and can be used for a variety of applications including columns, beams, truss systems, and in engineered assemblies. SRT requires less processing and sequesters more carbon than competing products. It is a regenerative and highly biophilic design option for the A/E/C community.

SRT falls under UN CPC Codes 03110 and 03120. The physical and mechanical properties of SRT vary depending on species.

SRT is delivered to site at approximately 35% moisture content, apart from a small fraction of SRT which is kiln-dried to 19% moisture content.

Further information can be found at https://originalmasstimber.com/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals		
Minerals	0.09	USA
Fossil materials		
Bio-based materials	99.91	Maine, USA

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	293.701
Biogenic carbon content in packaging, kg C	0.3907

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^3 of Structural Round Timber
Mass per declared unit	794.56 kg

SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
Disodium octaborate tetrahydrate	234-541-0	12008-41-2

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	MND	MND	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.

Manufacturing of SRT begins with raw logs. Logs may be first kiln-dried at a separate facility before processing at the factory, or more commonly are not kiln-dried
and air-dry in service. All logs are debarked manually. Connection features are cut using a variety of electric and gasoline powered tools. Propane and water are also used on-site at the fabrication facility. Wood waste produced at the factory is disposed of at either a municipal incineration site, landfilled, or burned on site at the factory.

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.

SRT is transported to site in either dedicated trucks (full-truck shipping) using dunnage, pallets, and plastic wrap or in less than full truck (LTL) shipping using only plastic wrap and pallets. Plastic film and pallets are conservatively assumed to be landfilled at end of life. Dunnage is produced from off-cuts of SRT produced in the factory. Dunnage is disposed of as part of wood waste accounted for under Module A3.

SRT is installed on-site using heavy machinery (telehandlers, cranes) and manual labor.

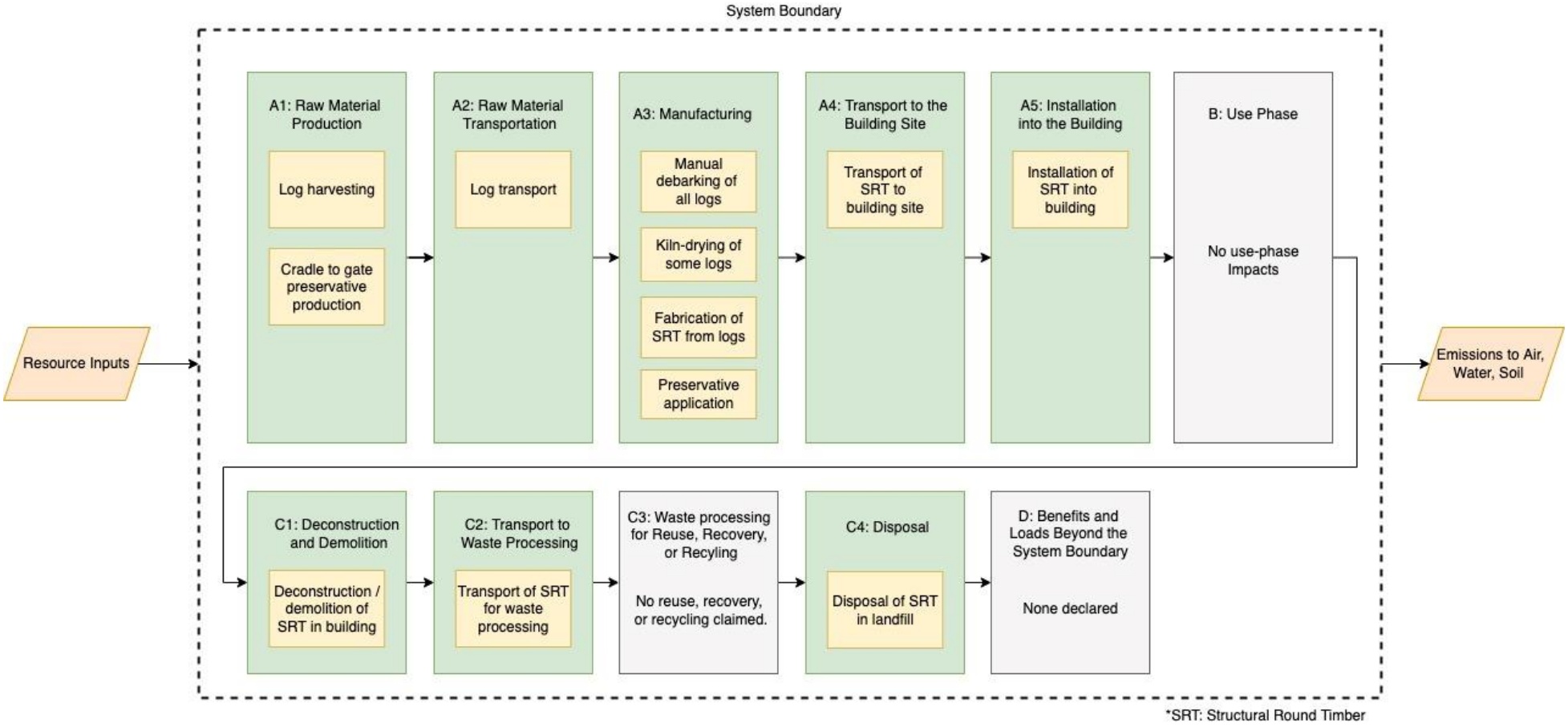
PRODUCT USE AND MAINTENANCE (B1-B7)

SRT does not require repair or maintenance in service.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

At end of life, SRT structures may be dismantled or demolished in the same ways as other forms of construction. In this assessment, the end of life of SRT is conservatively modelled as landfilling. In future, SRT could easily be reused in new structures, or in other high value applications.

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.

Impacts from optional finishes are excluded.

The following ancillary materials were also excluded because they comprise less than 1% of total mass and energy flows: tools, cutting blades, bits, chains.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. In this study, as per the reference standard, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

The data reported in this design-phase EPD for production of structural round timber at a proposed factory in Ashland, Maine, USA is based on full year of real production data at a reference facility (WholeTrees Structures' Westby, Wisconsin, USA factory) described in WholeTrees Structures 2022 EPD for Structural Round Timber.

The differences between the data included in this Design Phase EPD and WholeTrees' EPD are summarized below:

- Electricity impacts are localized to Maine.
- Log inputs are re-mapped based on closest-match species available in Maine.
- A2 and A4 transport distances are adjusted to the anticipated log transport and SRT transport distances, respectively, of the proposed Ashland facility.

Complete description of allocation, estimates, and assumptions follows below:

Allocation:

100% of impacts are allocated to SRT, the single product covered by this EPD.

Estimates and Assumptions:
All estimations and assumptions are given below.

A1:

Manufacturing Materials

Log inputs are mapped to datapoints for locally available Maine species and forestry practices corresponding to species used at reference facility (Westby, Wisconsin). Mappings to datapoints given below:

Black Locust: Hardwood Forestry, Oak, Sustainable Forest Management
Red Pine: Softwood forestry, pine, sustainable forest management
White Oak: Hardwood Forestry, Oak, Sustainable Forest Management
Cedar: Softwood forestry, pine, sustainable forest management

Annual production volume is estimated based on quoted SRT volume.

A2:

Log masses for transportation impacts of log inputs are calculated using the overall average density of log inputs. Impacts are split into transportation of timbers which require kiln-drying, and those which do not. Kiln-dried timbers require two transportation legs (transport from the forest to the kiln, and transport from the kiln to the factory). Non-kiln-dried timbers only require a single transportation leg (transport from the forest to the factory).

Timber for production of SRT at the proposed Ashland facility is expected to be sourced from Seven Islands Land Company forests. Transportation distances from anticipated harvest locations to both the kiln-drying facility and factory are conservatively modelled as the maximum distance from Seven Islands Land Company forests to the proposed Ashland facility (120 km). The distance between the likely location of the kiln-drying facility and the factory is estimated as 80 km.

A3:

Ancillary and Packaging Materials

Pallet consumption and disposal quantities are based on pallets being reused an estimated 10 times before disposal.

The quantity of plastic film used to package SRT for transit is modelled based on an estimate of annual consumption.

Manufacturing Energy Use

For the proportion of logs which are kiln-dried, kiln-drying impacts are provided.

Electricity and water use are provided for the entire factory where SRT is processed. Electricity and water consumption associated with activities at the factory not related to production is assumed to be negligible. Therefore 100% of electricity and water use is allocated to the product.

Gasoline, propane, and lubricant consumption for tools at factory are accounted for based on annual estimates.

Manufacturing Waste and Wastewater

Wood waste masses are calculated based on estimates of annual wood waste volume, at an estimated 50% packing density, using the average wood density of log inputs.

A4:

Transportation distances from the factory to the site are conservatively modelled as the maximum expected distance between the factory and likely sites in markets which this factory would serve (1000 km).

The impacts of transporting packaging materials (pallets and the plastic film used to wrap SRT in transit) are included in A4 transportation impacts.

A5:

SRT is installed on-site using heavy machinery (telehandlers, cranes) and manual labor. The diesel fuel consumed by these telehandlers and cranes for the installation of SRT has been modelled.

C1:

Deconstruction / demolition energy consumption has been conservatively modelled as the same amount of energy required for installation of SRT into a building (diesel fuel burned in telehandlers and cranes).

C2:

Waste SRT is assumed to be transported 50 km to a landfill site.

C3:

No SRT is assumed to be recovered for reuse or recycling.

C4:

SRT is assumed to be discarded in an unsanitary landfill.

D:

No benefits are claimed from reuse, recycling or heat or power generation from SRT or packaging materials used to transport it.

Allocation used in environmental data sources is aligned with the above.

AVERAGES AND VARIABILITY

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 3.6 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	kg CO_2e	-1.38E3	2.21E1	3.22E2	-1.04E3	7.26E1	2.72E1	MND	MND	MND	MND	MND	MND	MND	2.7E1	3.61E0	0E0	1.38E2	0E0
GWP – fossil	kg CO_2e	1.95E1	2.21E1	1.09E1	5.25E1	7.33E1	2.7E1	MND	MND	MND	MND	MND	MND	MND	2.7E1	3.61E0	0E0	3.53E0	0E0
GWP – biogenic	kg CO_2e	-1.4E3	8.49E-3	3.11E2	-1.09E3	5.32E-2	1.55E-1	MND	MND	MND	MND	MND	MND	MND	7.52E-3	2.62E-3	0E0	1.35E2	0E0
GWP – LULUC	kg CO_2e	8.96E-1	8.19E-3	6.29E-3	9.1E-1	2.2E-2	2.29E-3	MND	MND	MND	MND	MND	MND	MND	2.28E-3	1.09E-3	0E0	2.99E-4	0E0
Ozone depletion pot.	kg $CFC_{-11}e$	4.15E-6	4.8E-6	1.42E-6	1.04E-5	1.72E-5	5.84E-6	MND	MND	MND	MND	MND	MND	MND	5.84E-6	8.49E-7	0E0	7.62E-7	0E0
Acidification potential	mol H^+e	1.24E-1	9.4E-2	7.39E-2	2.92E-1	3.08E-1	2.83E-1	MND	MND	MND	MND	MND	MND	MND	2.83E-1	1.52E-2	0E0	3.72E-2	0E0
EP-freshwater[3)]	kg Pe	5.32E-3	2.16E-4	3.63E-4	5.89E-3	5.96E-4	1.09E-4	MND	MND	MND	MND	MND	MND	MND	1.09E-4	2.94E-5	0E0	8.77E-5	0E0
EP-marine	kg Ne	4.74E-2	2.79E-2	2.91E-2	1.04E-1	9.27E-2	1.25E-1	MND	MND	MND	MND	MND	MND	MND	1.25E-1	4.57E-3	0E0	2.55E-2	0E0
EP-terrestrial	mol Ne	4.84E-1	3.08E-1	3.2E-1	1.11E0	1.02E0	1.37E0	MND	MND	MND	MND	MND	MND	MND	1.37E0	5.05E-2	0E0	1.79E-1	0E0
POCP (“smog”)	kg NMVOCe	3.14E-1	9.31E-2	8.07E-2	4.87E-1	3.29E-1	3.77E-1	MND	MND	MND	MND	MND	MND	MND	3.77E-1	1.62E-2	0E0	8.42E-2	0E0
ADP-minerals & metals	kg Sbe	2.53E-4	5.8E-4	8.99E-5	9.23E-4	1.25E-3	4.14E-5	MND	MND	MND	MND	MND	MND	MND	4.13E-5	6.16E-5	0E0	5.4E-6	0E0
ADP-fossil resources	MJ	2.98E2	3.26E2	1.59E2	7.82E2	1.14E3	3.72E2	MND	MND	MND	MND	MND	MND	MND	3.72E2	5.62E1	0E0	4.86E1	0E0
Water use[2)]	m^3e depr.	3.54E0	1.25E0	1.71E1	2.19E1	4.24E0	6.94E-1	MND	MND	MND	MND	MND	MND	MND	6.94E-1	2.09E-1	0E0	9.09E-2	0E0

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	1.29E-6	1.55E-6	7.36E-7	3.57E-6	6.63E-6	7.5E-6	MND	MND	MND	MND	MND	MND	MND	7.5E-6	3.27E-7	0E0	9.79E-7	0E0
Ionizing radiation[5)]	kBq U235e	1.19E0	1.35E0	2.24E-1	2.77E0	4.98E0	1.59E0	MND	MND	MND	MND	MND	MND	MND	1.59E0	2.45E-1	0E0	2.08E-1	0E0
Ecotoxicity (freshwater)	CTUe	5.32E2	2.77E2	2.52E2	1.06E3	8.71E2	2.18E2	MND	MND	MND	MND	MND	MND	MND	2.18E2	4.29E1	0E0	4.63E1	0E0
Human toxicity, cancer	CTUh	2.75E-8	7.54E-9	1.26E-8	4.76E-8	2.23E-8	7.82E-9	MND	MND	MND	MND	MND	MND	MND	7.82E-9	1.1E-9	0E0	1.17E-9	0E0
Human tox. non-cancer	CTUh	6.56E-7	2.9E-7	5.81E-7	1.53E-6	1.03E-6	1.93E-7	MND	MND	MND	MND	MND	MND	MND	1.93E-7	5.09E-8	0E0	2.09E-7	0E0
SQP	-	1.19E2	2.68E2	4.09E1	4.28E2	1.72E3	9.97E0	MND	MND	MND	MND	MND	MND	MND	9.55E0	8.48E1	0E0	2.94E2	0E0

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	MJ	1.14E3	3.64E0	1.97E2	1.34E3	1.43E1	2.01E0	MND	MND	MND	MND	MND	MND	MND	2.01E0	7.07E-1	0E0	2.64E-1	0E0
Renew. PER as material	MJ	1.41E4	0E0	5.02E1	1.42E4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1.53E4	3.64E0	2.47E2	1.55E4	1.43E1	2.01E0	MND	MND	MND	MND	MND	MND	MND	2.01E0	7.07E-1	0E0	2.64E-1	0E0
Non-re. PER as energy	MJ	2.98E2	3.26E2	1.58E2	7.82E2	1.14E3	3.72E2	MND	MND	MND	MND	MND	MND	MND	3.72E2	5.62E1	0E0	4.86E1	0E0
Non-re. PER as material	MJ	0E0	0E0	4.6E-1	4.6E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	2.98E2	3.26E2	1.59E2	7.82E2	1.14E3	3.72E2	MND	MND	MND	MND	MND	MND	MND	3.72E2	5.62E1	0E0	4.86E1	0E0
Secondary materials	kg	6.44E-3	0E0	1.14E-3	7.59E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
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	1.75E-1	5.62E-2	1.42E-1	3.73E-1	2.37E-1	3.29E-2	MND	MND	MND	MND	MND	MND	MND	3.29E-2	1.17E-2	0E0	4.3E-3	0E0

6) 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	6.81E-1	4.26E-1	1.3E0	2.4E0	1.11E0	4E-1	MND	MND	MND	MND	MND	MND	MND	4E-1	5.46E-2	0E0	5.25E-2	0E0
Non-hazardous waste	kg	1.5E1	2.37E1	2.42E2	2.81E2	1.22E2	5.16E0	MND	MND	MND	MND	MND	MND	MND	4.28E0	6.04E0	0E0	7.95E2	0E0
Radioactive waste	kg	1.85E-3	2.15E-3	3.32E-4	4.33E-3	7.82E-3	2.61E-3	MND	MND	MND	MND	MND	MND	MND	2.61E-3	3.86E-4	0E0	3.4E-4	0E0

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	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_2e	2E1	2.19E1	1.29E1	5.48E1	7.26E1	2.69E1	MND	MND	MND	MND	MND	MND	MND	2.68E1	3.58E0	0E0	7.27E1	0E0
Ozone depletion Pot.	kg CFC_{-11}e	3.35E-6	3.81E-6	1.14E-6	8.29E-6	1.37E-5	4.62E-6	MND	MND	MND	MND	MND	MND	MND	4.62E-6	6.75E-7	0E0	6.03E-7	0E0
Acidification	kg SO_2e	7.82E-2	6.93E-2	5.05E-2	1.98E-1	1.49E-1	3.99E-2	MND	MND	MND	MND	MND	MND	MND	3.99E-2	7.35E-3	0E0	1.99E-2	0E0
Eutrophication	kg PO_4^3e	4.26E-2	1.59E-2	2.88E-1	3.47E-1	3.01E-2	1.56E-2	MND	MND	MND	MND	MND	MND	MND	7.03E-3	1.48E-3	0E0	7.69E0	0E0
POCP (“smog”)	kg C_2H_4e	3.68E-2	2.93E-3	2.38E-3	4.21E-2	9.45E-3	4.13E-3	MND	MND	MND	MND	MND	MND	MND	4.11E-3	4.65E-4	0E0	2.13E-2	0E0
ADP-elements	kg Sbe	2.53E-4	5.8E-4	8.99E-5	9.23E-4	1.25E-3	4.14E-5	MND	MND	MND	MND	MND	MND	MND	4.13E-5	6.16E-5	0E0	5.4E-6	0E0
ADP-fossil	MJ	2.98E2	3.26E2	1.59E2	7.82E2	1.14E3	3.72E2	MND	MND	MND	MND	MND	MND	MND	3.72E2	5.62E1	0E0	4.86E1	0E0

ENVIRONMENTAL IMPACTS – TRACI 2.1. / 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	1.93E1	2.18E1	1.32E1	5.43E1	7.25E1	2.68E1	MND	MND	MND	MND	MND	MND	MND	2.67E1	3.57E0	0E0	8.05E1	0E0
Ozone Depletion	kg $CFC_{-11}e$	4.41E-6	5.08E-6	1.51E-6	1.1E-5	1.82E-5	6.16E-6	MND	MND	MND	MND	MND	MND	MND	6.16E-6	8.99E-7	0E0	8.05E-7	0E0
Acidification	kg SO_2e	1.1E-1	8.24E-2	6.56E-2	2.58E-1	2.68E-1	2.59E-1	MND	MND	MND	MND	MND	MND	MND	2.59E-1	1.32E-2	0E0	3.44E-2	0E0
Eutrophication	kg Ne	6.39E-2	1.12E-2	1.8E-2	9.31E-2	3.77E-2	2.29E-2	MND	MND	MND	MND	MND	MND	MND	2.29E-2	1.86E-3	0E0	2.19E-2	0E0
POCP (“smog”)	kg O_3e	2.93E0	1.77E0	1.72E0	6.42E0	5.88E0	7.95E0	MND	MND	MND	MND	MND	MND	MND	7.95E0	2.9E-1	0E0	1.04E0	0E0
ADP-fossil	MJ	4.05E1	4.58E1	2.37E1	1.1E2	1.63E2	5.5E1	MND	MND	MND	MND	MND	MND	MND	5.5E1	8.04E0	0E0	7.18E0	0E0

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
14.07.2022

VERIFIED ISO 14025