



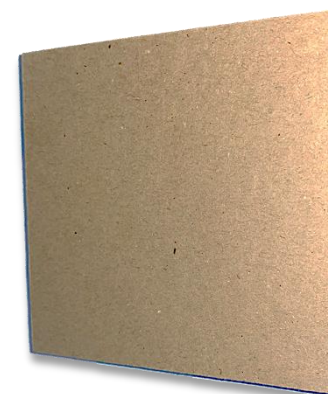
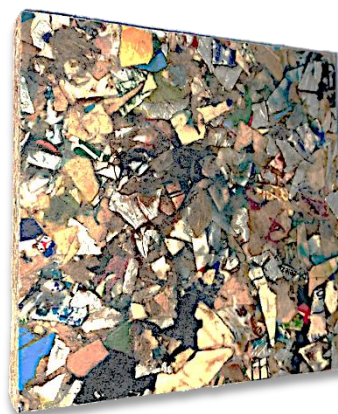
# RECOMA



## ENVIRONMENTAL PRODUCT DECLARATION

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

RECOMA PackWall  
Recoma AB



**EPD HUB, HUB-0019**

Publishing date 06 Apr. 2022, last updated date 06 Apr. 2022, valid until 06 Oct. 2023



Created with One Click LCA

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	Recoma AB
Address	Norra Kringelvägen 13 28141 Hässleholm
Contact details	info@recoma.se
Website	www.recoma.se

### 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 options, A4, and modules C1-C4 and D
EPD author	Max Rosenberg, Recoma AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	Elma Avdyli, 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	RECOMA PackWall
Place of production	Hässleholm, Sweden
Period for data	2021
Averaging in EPD	No averaging

### ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m <sup>2</sup>
Declared unit mass	9,36 kg
GWP-fossil, A1-A3 (kgCO <sub>2e</sub> )	0,424
GWP-total, A1-A3 (kgCO <sub>2e</sub> )	0,488
Secondary material, inputs (%)	5,38
Secondary material, outputs (%)	100
Total energy use, A1-A3 (kWh)	1,79
Total water use, A1-A3 (m <sup>3e</sup> )	0,00413

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

RECOMA manufactures construction boards from recycled material with a unique combination of properties; strong and durable, protected against moisture and mold, as well as superior thermal and sound insulation. RECOMA manufactures its products from 100% recycled composite packaging in a process generating 0 waste, 0 emissions and using 0 water and 0 additives. The product is also 100% recyclable, contributing to the transition to a circular economy. RECOMA uses 100% food-grade material in its production, without adding any glues or other chemicals, making it safe to handle.

### PRODUCT DESCRIPTION

RECOMA PackWall is a construction board designed for use in construction and furniture manufacturing. The boards can be custom ordered but are offered as standard in dimensions 1200x2500 mm. This EPD represents a 12mm thick board. Thickness of the boards vary between 8 and 18 mm depending on variant of the product (see table under headline 3). The surface of the boards is laminated with LDPE (low density polyethylene, 25 g / m<sup>2</sup>) and paperboard (200 g / m<sup>2</sup>) which contributes to a smooth surface ready for treatment. Density of the boards vary between cca 750-850 kg / m<sup>3</sup>. Tolerance of thickness +/- 0.7 mm.

Further information can be found at [www.recoma.se](http://www.recoma.se).

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	5	Sweden
Minerals	-	-
Fossil materials	29	Sweden
Bio-based materials	66	Sweden

### 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

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m <sup>2</sup>
Mass per declared unit	9,36 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 incineration	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.

Steps in the production process include shredding the input material (waste beverage cartons) to a fraction size of around 30x30 mm, heating the material up above the melting point of the polymer content and pressing it between layers of recycled LDPE-film and paperboard, then cooling the finished product down, format sawing it to size and loading it on pallets. Pallets also manufactured from waste beverage cartons. The boards are then secured on the pallets with recycled plastic straps.

### 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. Average distance of transportation from production plant to building site is assumed as 270,7 km (the mean distance from production plant to the main markets of Malmö, Göteborg, and Stockholm) and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 100 which means full load. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product are packaged properly. Also, volume capacity utilisation factor is assumed to be 100 for the nested packaged products.

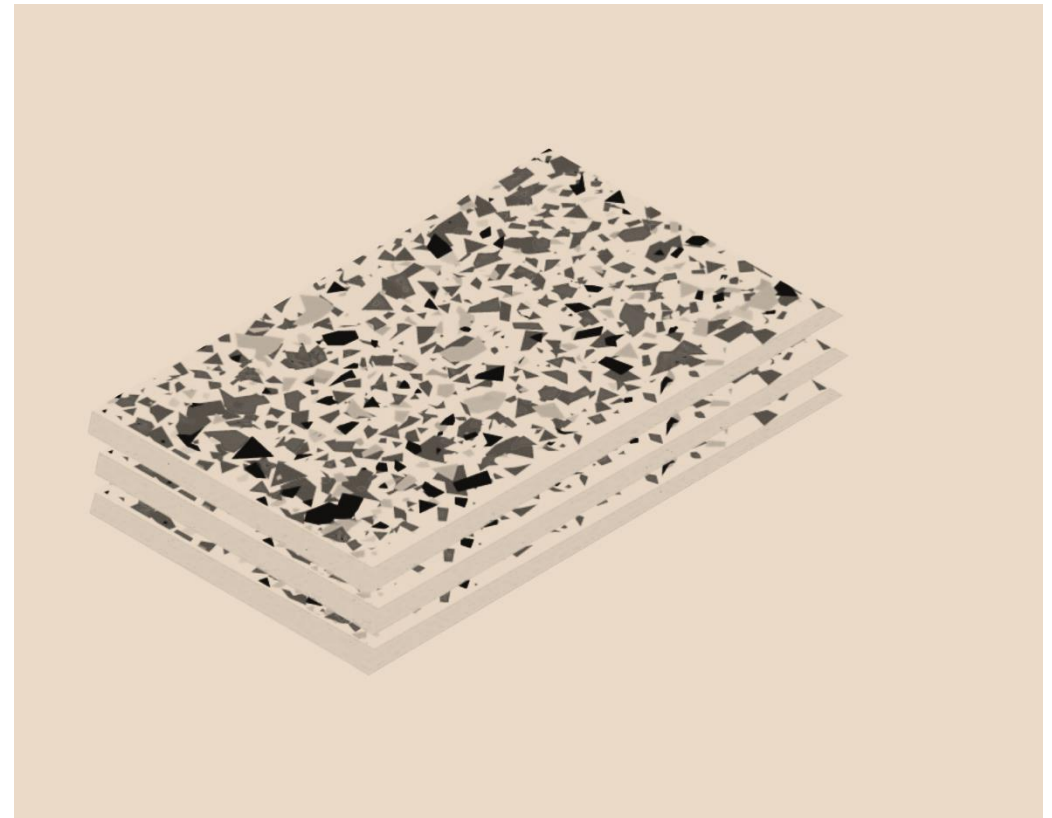
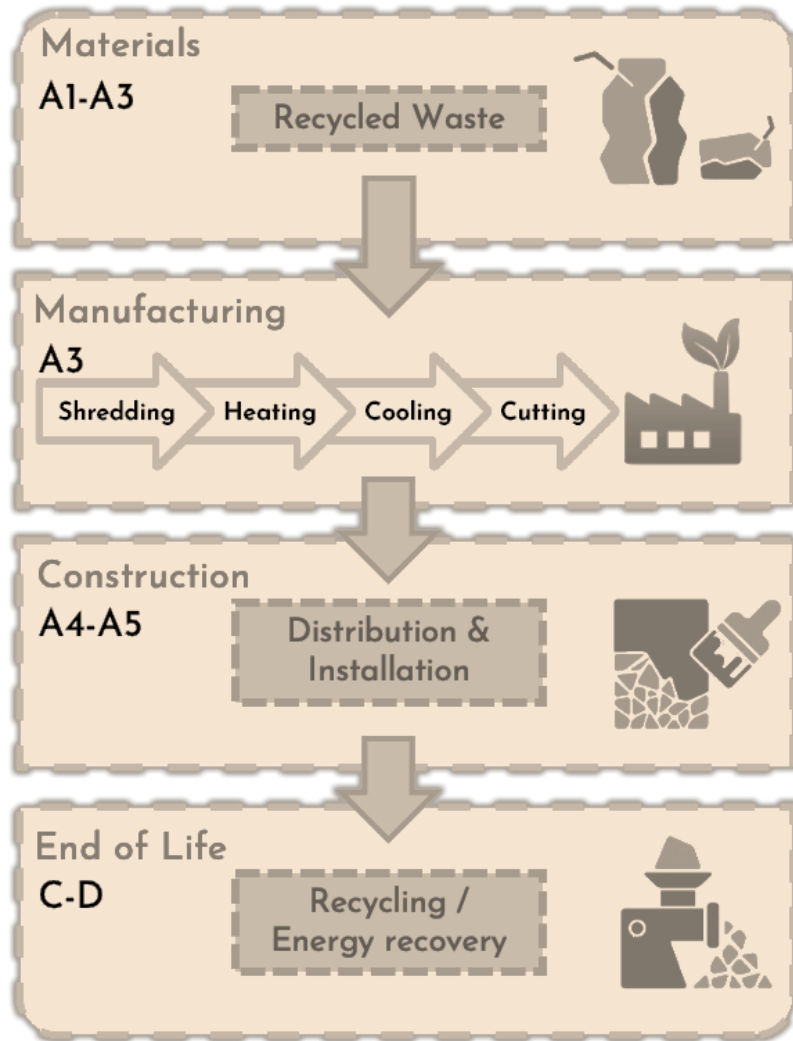
### PRODUCT USE AND MAINTENANCE (B1-B7)

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)

At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected. The demolition process consumes negligible energy as removal/demolition is performed manually or with minor usage of power tools (C1). The dismantled construction board is delivered to the nearest construction waste treatment plant, average distance 20 km (C2) for energy recovery. At the waste treatment plant, waste that can be reused, recycled or recovered for energy is separated and diverted for further use(C3). Unusable materials are disposed of in a landfill (C4). Due to the product being made from completely recycled material, no benefit is claimed for the energy recovery from incineration, which is accounted for as a load (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.

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.

### 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.

As this is the only product produced in the factory, but in different thicknesses and density - raw material, packaging material, and energy consumption data is allocated based on annual production rate and made with high accuracy and precision.

However, as 12 months production data is not available, estimates for raw material, packaging material, and energy consumption have been taken from the manufacture of the same product by another manufacturer that uses similar materials, machinery, and manufacturing process. These estimates take into account any location-specific deviations and details in product.

The values for 1 square meter of board are calculated by considering the total product weight per annual production. According to the ratio of the annual production of the declared product to the total annual production at the factory, the annual total raw materials, energy consumption and packaging materials per the declared product are allocated. Subsequently, the product output fixed to 9,36 kg of element and the corresponding amount of product is used in the calculations.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs.

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 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 <sub>2e</sub>	2,18E-1	2,65E-1	4,07E-3	4,88E-1	4,26E-1	MND	MND	MND	MND	MND	MND	MND	MND	OE0	1,7E-2	5,11E0	OE0	OE0
GWP - fossil	kg CO <sub>2e</sub>	1,57E-1	2,65E-1	2,82E-3	4,24E-1	4,3E-1	MND	MND	MND	MND	MND	MND	MND	MND	OE0	1,7E-2	4,67E-1	OE0	OE0
GWP - biogenic	kg CO <sub>2e</sub>	6,03E-2	1,83E-4	1,22E-3	6,17E-2	2,29E-4	MND	MND	MND	MND	MND	MND	MND	MND	OE0	1,24E-5	4,64E0	OE0	OE0
GWP - LULUC	kg CO <sub>2e</sub>	1,41E-3	8,29E-5	2,53E-5	1,52E-3	1,52E-4	MND	MND	MND	MND	MND	MND	MND	MND	OE0	5,12E-6	3,08E-4	OE0	OE0
Ozone depletion pot.	kg CFC <sub>11e</sub>	1,82E-8	6,2E-8	3,84E-10	8,05E-8	9,76E-8	MND	MND	MND	MND	MND	MND	MND	MND	OE0	4E-9	9,03E-8	OE0	OE0
Acidification potential EP-freshwater <sup>3)</sup>	mol H <sup>+</sup> e	6,5E-4	1,4E-3	1,27E-5	2,06E-3	1,76E-3	MND	MND	MND	MND	MND	MND	MND	MND	OE0	7,15E-5	4,27E-3	OE0	OE0
EP-marine	kg Ne	2,47E-4	4,05E-4	4,49E-6	6,56E-4	5,22E-4	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,15E-5	2,2E-3	OE0	OE0
EP-terrestrial	mol Ne	2E-3	4,48E-3	3,98E-5	6,52E-3	5,76E-3	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,38E-4	1,61E-2	OE0	OE0
POCP ("smog")	kg NMVOC <sub>e</sub>	4,06E-4	1,38E-3	7,4E-6	1,8E-3	1,76E-3	MND	MND	MND	MND	MND	MND	MND	MND	OE0	7,65E-5	5,63E-3	OE0	OE0
ADP-minerals & metals	kg Sbe	2E-6	4,42E-6	3,7E-8	6,45E-6	1,16E-5	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,9E-7	8,31E-6	OE0	OE0
ADP-fossil resources	MJ	2,18E0	4,09E0	5,31E-2	6,33E0	6,48E0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,65E-1	6,61E0	OE0	OE0
Water use <sup>2)</sup>	m <sup>3</sup> e depr.	4,94E-2	1,5E-2	1,04E-3	6,55E-2	2,09E-2	MND	MND	MND	MND	MND	MND	MND	MND	OE0	9,84E-4	4,53E-2	OE0	OE0

## 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 energ.	MJ	6,37E-2	5,07E-2	9,43E-3	1,24E-1	9,14E-2	MND	MND	MND	MND	MND	MND	MND	MND	OE0	3,33E-3	1,59E-1	OE0	OE0
Renew. PER as material	MJ	2,59E-1	OE0	4,67E-3	2,64E-1	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Total use of renew. PER	MJ	3,23E-1	5,07E-2	1,41E-2	3,88E-1	9,14E-2	MND	MND	MND	MND	MND	MND	MND	MND	OE0	3,33E-3	1,59E-1	OE0	OE0
Non-re. PER as energ.	MJ	2,18E0	4,09E0	5,31E-2	6,33E0	6,48E0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,65E-1	6,61E0	OE0	OE0
Non-re. PER as material	MJ	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Total use of non-re. PER	MJ	2,18E0	4,09E0	5,31E-2	6,33E0	6,48E0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,65E-1	6,61E0	OE0	OE0
Secondary materials	kg	4,95E-1	OE0	8,61E-3	5,04E-1	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Renew. secondary fuels	MJ	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Non-ren. secondary fuels	MJ	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Use of net fresh water	m <sup>3</sup>	3,23E-3	8,37E-4	6,15E-5	4,13E-3	1,11E-3	MND	MND	MND	MND	MND	MND	MND	MND	OE0	5,51E-5	1,76E-3	OE0	OE0

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	6,5E-3	3,99E-3	1,22E-4	1,06E-2	6,58E-3	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,57E-4	OE0	OE0	OE0
Non-hazardous waste	kg	3,04E-1	4,28E-1	5,47E-3	7,38E-1	4,52E-1	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,84E-2	OE0	OE0	OE0
Radioactive waste	kg	5,79E-6	2,81E-5	2,67E-7	3,42E-5	4,44E-5	MND	MND	MND	MND	MND	MND	MND	MND	OE0	1,82E-6	OE0	OE0	OE0

### 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	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Materials for recycling	kg	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0
Materials for energy rec.	kg	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	9,36E0	OE0	OE0
Exported energy	MJ	OE0	OE0	OE0	OE0	OE0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	OE0	OE0	OE0	OE0

### 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 <sub>2</sub> e	1,58E-1	2,63E-1	2,86E-3	4,23E-1	4,26E-1	MND	MND	MND	MND	MND	MND	MND	MND	OE0	1,69E-2	2,53E0	OE0	OE0
Ozone depletion Pot.	kg CFC <sub>11e</sub>	1,51E-8	4,93E-8	3,7E-10	6,47E-8	7,77E-8	MND	MND	MND	MND	MND	MND	MND	MND	OE0	3,18E-9	7,24E-8	OE0	OE0
Acidification	kg SO <sub>2</sub> e	4,13E-4	7,82E-4	8E-6	1,2E-3	8,62E-4	MND	MND	MND	MND	MND	MND	MND	MND	OE0	3,46E-5	3,6E-3	OE0	OE0
Eutrophication	kg PO <sub>4</sub> <sup>3e</sup>	3,82E-4	1,34E-4	6,95E-6	5,24E-4	1,77E-4	MND	MND	MND	MND	MND	MND	MND	MND	OE0	6,99E-6	8,51E-3	OE0	OE0
POCP ("smog")	kg C <sub>2</sub> H <sub>4</sub> e	2,48E-5	3,96E-5	4,74E-7	6,49E-5	5,67E-5	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,19E-6	8,57E-4	OE0	OE0
ADP-elements	kg Sbe	2E-6	4,42E-6	3,7E-8	6,45E-6	1,16E-5	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,9E-7	8,31E-6	OE0	OE0
ADP-fossil	MJ	2,18E0	4,09E0	5,31E-2	6,33E0	6,48E0	MND	MND	MND	MND	MND	MND	MND	MND	OE0	2,65E-1	6,61E0	OE0	OE0



## 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 ED 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.

Elma Avdyli, approved verifier by EPD Hub, 06.04.2022

