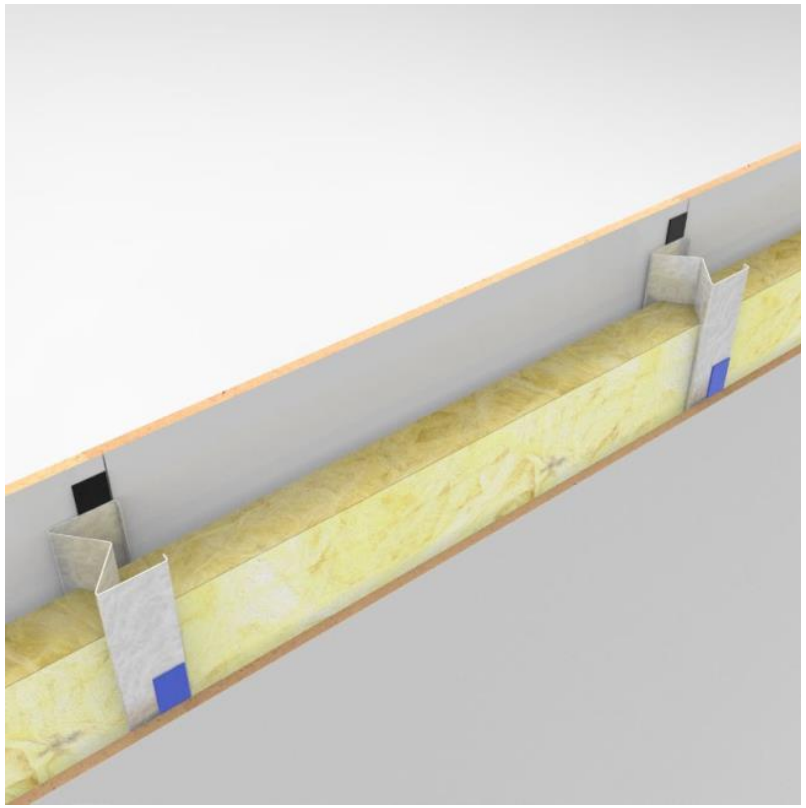
ENVIRONMENTAL PRODUCT DECLARATION

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

JUUNOO SilentClick



EPD HUB, EPD number XXXXX

Publishing XXX date, last updated XXX date, valid until XXX date

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	JUUNOO
Address	Blokkestraat 51, BE 8550 Zwevegem
Contact details	info@juunoo.com
Website	http://www/juunoo.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	Maxim Deprez
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ 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	JUUNOO SilentClick
Additional labels	
Product reference	JW.75.G5.SP / JW.75.G5.SD
Place of production	Belgium
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m²
Declared unit mass	50.54 kg
GWP-fossil, A1-A3 (kgCO2e)	4,84E1
GWP-total, A1-A3 (kgCO2e)	1,72E1
Secondary material, inputs (%)	7.34
Secondary material, outputs (%)	100.0
Total energy use, A1-A3 (kWh)	387.0
Total water use, A1-A3 (m3e)	0.315

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

JUUNOO was founded in 2017 and produces circular walls. Our clickable wall system makes it possible to quickly divide, disassemble and reuse rooms. JUUNOO walls can be installed 7 times faster than traditional walls, have numerous aesthetic finishes and can be installed and repositioned countless times, making them durable. Our cashback guarantee ultimately guarantees property owners that when they can no longer use the wall, JUUNOO will buy it back at a fixed price and resell it to another property owner. In this way we respond to the growing demand for a circular economy, which reduces both the ecological and economic impact.

PRODUCT DESCRIPTION

JUUNOO SilentClick is a modular partition wall consisting out of steel modules, wooden panels and glass wool for insulation.

The modules, panels & insulation are coming from trusted suppliers with responsible production. The modules are made through punching, limiting the losses.
Tape is applied in the warehouse on both modules & panels. Once the products arrive on the project site, assembly is performed including the insulation.

Properties

- Total thickness: 136 mm
- Modules: I75t, C75t
- Cladding: SilentClick Decor 28mm
- Insulation: Glass wool 50mm – 33kg/m³
- Sound reduction: 54(-5;-12) dB

Further information can be found at http://www/juunoo.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	5.8	Belgium
Minerals	3.9	Belgium
Fossil materials	0.1	Belgium
Bio-based materials	90.2	Belgium

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	8.55
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m²
Mass per declared unit	50.54 kg
Functional unit	1 m²
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	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 modules, panels & insulation are coming from trusted suppliers with responsible production. The modules are made through punching, limiting the losses. Tape is applied in the warehouse on both modules & panels. Once the products arrive on the project site, assembly is performed including the insulation.
All components are transported to the site by means of pallets and nylon straps.
The manufacturing waste is sent for recycling through a waste management collector.

Our wooden panels consist out of 89% renewable materials and are made from 100% recovered wood.

1/3 of the energy used for manufacturing is produced through photo-voltaic panels.

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 is typically through lorry and the distances used in our LCA calculations are a weighted average based on historic data.

Thanks to our patented system, the installation of our products is very fast and thus requires the minimum amount of electricity, screws and tape. We minimize the packaging materials to only pallets and nylon straps of which the pallets are used in a closed-loop system hence only transport impacts are covered. The nylon straps are gathered on the project site and taken back to the warehouse where they are collected for recycling.

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.

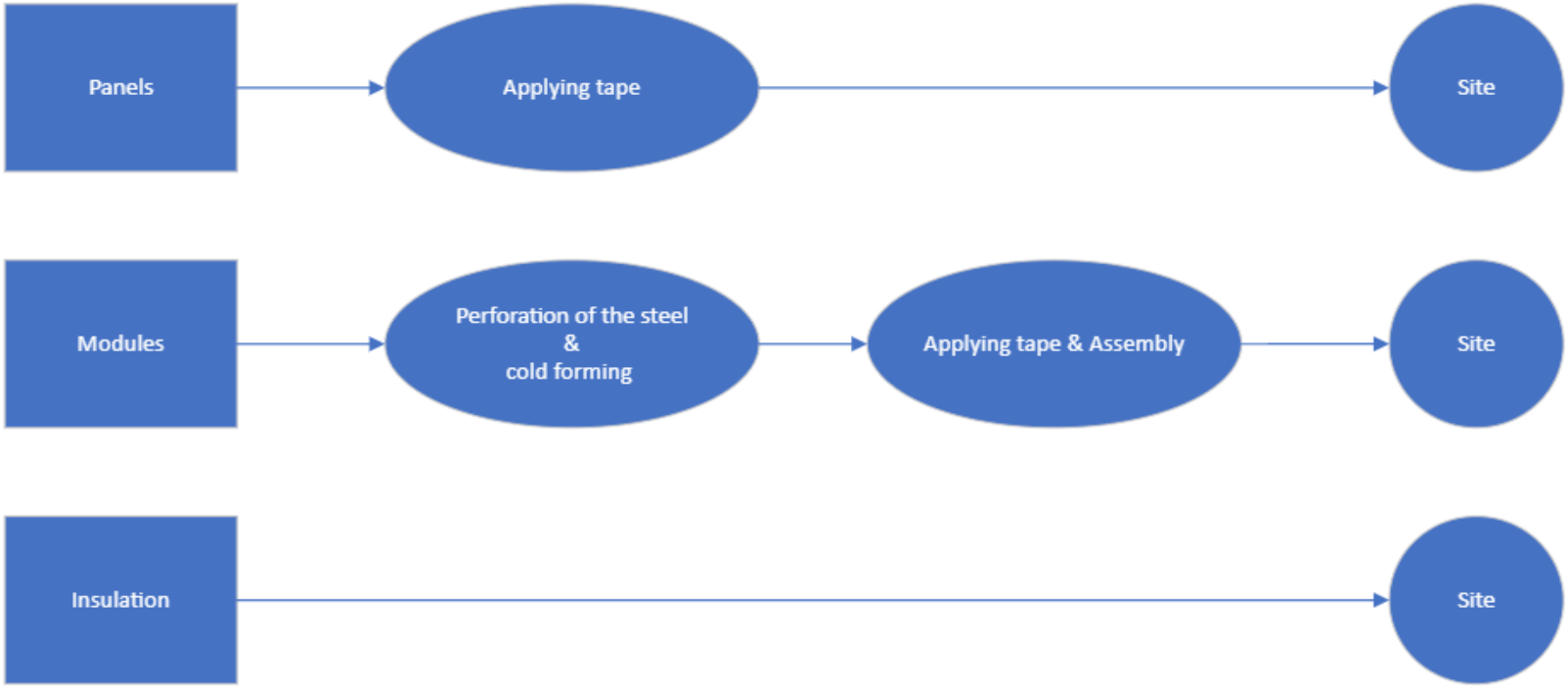
PRODUCT END OF LIFE (C1-C4, D)

The main value of JUUNOO products is the simple fact that all of our systems are designed to be easily disassembled and reused whenever and wherever the client wants. If the client wants to get rid of the system, JUUNOO commits to always buy it back, ensuring the full closed

loop of the product. Energy use is limited to unscrewing the assembly in module C1.

In general, no (end-of-life) waste is ever produced when using JUUNOO systems except for the acrylic tape - re-using scenario is considered.

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	Allocated by mass or volume
Packaging materials	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
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_2e	1,64E1	9,01E-2	7,87E-1	1,72E1	3,76E-1	5,22E-2	MND	MND	MND	MND	MND	MND	MND	3,01E-4	3,68E-1	3,13E1	0E0	0E0
GWP – fossil	kg CO_2e	4,75E1	9E-2	7,86E-1	4,84E1	3,79E-1	4,72E-2	MND	MND	MND	MND	MND	MND	MND	2,96E-4	3,67E-1	1,48E-3	0E0	-4,85E1
GWP – biogenic	kg CO_2e	-3,12E1	6,53E-5	4,45E-4	-3,12E1	1,35E-4	4,94E-3	MND	MND	MND	MND	MND	MND	MND	4,36E-6	1,65E-4	3,13E1	0E0	-4,91E-2
GWP – LULUC	kg CO_2e	6,55E-2	2,71E-5	6,79E-4	6,62E-2	1,55E-4	5,92E-5	MND	MND	MND	MND	MND	MND	MND	7,05E-7	1,48E-4	8,57E-7	0E0	-6,4E-2
Ozone depletion pot.	kg $CFC_{-11}e$	5,56E-6	2,12E-8	5,48E-8	5,64E-6	8,39E-8	7,17E-9	MND	MND	MND	MND	MND	MND	MND	6,17E-11	8,3E-8	1,07E-10	0E0	-5,48E-6
Acidification potential	mol H^+e	3,77E-1	3,78E-4	2,76E-3	3,8E-1	4,43E-3	1,71E-4	MND	MND	MND	MND	MND	MND	MND	7,36E-7	4,34E-3	4,24E-6	0E0	-3,28E-1
EP-freshwater[2)]	kg Pe	2,81E-3	7,32E-7	1,7E-5	2,83E-3	3,02E-6	1,6E-6	MND	MND	MND	MND	MND	MND	MND	8,91E-9	2,63E-6	2,46E-8	0E0	-2,87E-3
EP-marine	kg Ne	5,83E-2	1,14E-4	6,82E-4	5,91E-2	1,15E-3	4,42E-5	MND	MND	MND	MND	MND	MND	MND	1,52E-7	1,13E-3	1,17E-6	0E0	-5,75E-2
EP-terrestrial	mol Ne	1,14E0	1,26E-3	6,24E-3	1,15E0	1,28E-2	4,71E-4	MND	MND	MND	MND	MND	MND	MND	1,86E-6	1,25E-2	1,28E-5	0E0	-9,16E-1
POCP ("smog")[3)]	kg NMVOCe	2,22E-1	4,04E-4	2,01E-3	2,25E-1	3,55E-3	1,55E-4	MND	MND	MND	MND	MND	MND	MND	4,75E-7	3,48E-3	4,15E-6	0E0	-2,28E-1
ADP-minerals & metals[4)]	kg Sbe	9,32E-3	1,54E-6	1,1E-5	9,33E-3	5,45E-6	6,7E-7	MND	MND	MND	MND	MND	MND	MND	3,44E-9	5,32E-6	1,81E-8	0E0	-8,86E-4
ADP-fossil resources	MJ	7,71E2	1,4E0	1,58E1	7,88E2	5,56E0	1,08E0	MND	MND	MND	MND	MND	MND	MND	1,18E-2	5,44E0	1,45E-2	0E0	-7,69E2
Water use[5)]	m^3e depr.	4,73E1	5,21E-3	3,16E-1	4,76E1	2,04E-2	1,48E-2	MND	MND	MND	MND	MND	MND	MND	1,21E-4	1,82E-2	3,11E-4	0E0	-4,7E1

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	6,05E2	1,76E-2	2,78E0	6,08E2	5,63E-2	8,25E-2	MND	MND	MND	MND	MND	MND	MND	1,31E-3	6,11E-2	7,15E-4	0E0	-6,05E2
Renew. PER as material	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	6,05E2	1,76E-2	2,78E0	6,08E2	5,63E-2	8,25E-2	MND	MND	MND	MND	MND	MND	MND	1,31E-3	6,11E-2	7,15E-4	0E0	-6,05E2
Non-re. PER as energy	MJ	7,7E2	1,4E0	1,58E1	7,87E2	5,56E0	1,08E0	MND	MND	MND	MND	MND	MND	MND	1,18E-2	5,44E0	1,45E-2	0E0	-7,68E2
Non-re. PER as material	MJ	1,37E3	0E0	1,75E0	1,37E3	0E0	-1,62E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-1,37E3	0E0	1,37E3
Total use of non-re. PER	MJ	2,14E3	1,4E0	1,75E1	2,16E3	5,56E0	-5,43E-1	MND	MND	MND	MND	MND	MND	MND	1,18E-2	5,44E0	-1,37E3	0E0	6,03E2
Secondary materials	kg	3,08E0	0E0	6,25E-1	3,71E0	0E0	7,89E-4	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-2,13E0
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	3,11E-1	2,91E-4	3,38E-3	0.315	1,02E-3	3,43E-4	MND	MND	MND	MND	MND	MND	MND	2,9E-6	9,89E-4	4,35E-6	0E0	-2,71E-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	4,23E0	1,36E-3	2,13E-2	4,25E0	6,47E-3	5,02E-3	MND	MND	MND	MND	MND	MND	MND	1,28E-5	5,53E-3	0E0	0E0	-4,89E0
Non-hazardous waste	kg	1E2	1,5E-1	4,87E-1	1,01E2	4,88E-1	8,78E-2	MND	MND	MND	MND	MND	MND	MND	3,68E-4	4,68E-1	0E0	0E0	-1,02E2
Radioactive waste	kg	2,19E-3	9,61E-6	8,49E-5	2,28E-3	3,78E-5	7,64E-6	MND	MND	MND	MND	MND	MND	MND	1,04E-7	3,75E-5	0E0	0E0	-2,12E-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	5,05E1	0E0	0E0
Materials for recycling	kg	0E0	0E0	3E-2	3E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	4E-3	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	4,62E1	8,92E-2	7,47E-1	4,7E1	3,76E-1	4,74E-2	MND	MND	MND	MND	MND	MND	MND	2,9E-4	3,64E-1	1,44E-3	0E0	-4,71E1
Ozone depletion Pot.	kg $CFC_{-11}e$	4,69E-6	1,68E-8	7,01E-8	4,77E-6	6,66E-8	7,56E-9	MND	MND	MND	MND	MND	MND	MND	8,01E-11	6,59E-8	8,93E-11	0E0	-4,6E-6
Acidification	kg SO_2e	2,48E-1	1,83E-4	2,26E-3	2,5E-1	3,38E-3	1,17E-4	MND	MND	MND	MND	MND	MND	MND	5,95E-7	3,11E-3	2,67E-6	0E0	-2,42E-1
Eutrophication	kg PO_4^3e	9,3E-2	3,7E-5	6,18E-4	9,37E-2	4,63E-4	7,38E-5	MND	MND	MND	MND	MND	MND	MND	3,05E-7	3,96E-4	3,07E-6	0E0	-9,62E-2
POCP (“smog”)	kg C_2H_4e	2,08E-2	1,16E-5	1,08E-4	2,09E-2	1,03E-4	1,11E-5	MND	MND	MND	MND	MND	MND	MND	2,94E-8	1,01E-4	2,52E-7	0E0	-2,19E-2
ADP-elements	kg Sbe	9,32E-3	1,54E-6	1,1E-5	9,33E-3	5,45E-6	6,7E-7	MND	MND	MND	MND	MND	MND	MND	3,44E-9	5,32E-6	1,81E-8	0E0	-8,86E-4
ADP-fossil	MJ	7,71E2	1,4E0	1,58E1	7,88E2	5,56E0	1,08E0	MND	MND	MND	MND	MND	MND	MND	1,18E-2	5,44E0	1,45E-2	0E0	-7,69E2

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.

#SIGNATURE#