

ENVIRONMENTAL PRODUCT DECLARATION

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

ML-lasiseinä glass wall
Muotolevy Oy

EPD HUB, HUB-2140

Published on 24.11.2024, last updated on 24.11.2024, valid until 24.11.2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Muotolevy Oy
Address	Tervasuontie 3, 03100 Nummela, Finland
Contact details	myynti@muotolevy.fi
Website	www.muotolevy.fi

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 und 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	Riikka Anttonen, Laura Sariola, Afry Finland Oy
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	Nemanja Nedic, 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	ML-lasiseinä glass wall
Product reference	303631
Place of production	Tervasuontie 3, 03100 Nummela, Finland
Period for data	2022

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m ²
Declared unit mass	31.4 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	6,53E+01
GWP-total, A1-A3 (kgCO ₂ e)	6,49E+01
Secondary material, inputs (%)	0.66
Secondary material, outputs (%)	55
Total energy use, A1-A3 (kWh)	313
Net freshwater use, A1-A3 (m ³)	1.4

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Muotolevy is a growing and developing family-owned company founded in 1974. Muotolevy is passionate about developing the quality of Finnish construction and working and living environments. Muotolevy's offering includes high-quality dry construction solutions for interior and façade construction, as well as flexible soundproof interior walls for offices and public premises.

PRODUCT DESCRIPTION

The product consists of one or more glass sheets with a glass seam strip, aluminum frames and rubber seals. ML-lasiseinä glass wall allows large uniform glass surfaces, which makes it an excellent solution for the implementation of a spacious, bright and comfortable working environment. ML-lasiseinä glass wall's soundproofing levels ensure the functionality of the wall system both as a space divider in the working environment and as a wall solution for an efficiently soundproofed meeting room.

This EPD covers the product with the following technical specifications:

- glass wall dimensions 1200 - 4800 mm (width), 2100-2690 mm (height)
- aluminium profile dimensions: width 31mm, height 35 mm, powder coated
- double glazed glass sheets 6+6 mm Sound Control (Rw 40 dB)

Environmental information on the product with glass thickness 8+8 mm is given as additional information in Appendix 1.

Further information can be found at www.muotolevy.fi

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	5	EU
Minerals	92	EU
Fossil materials	3	EU
Bio-based materials	0	-

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	0.13

UNIT

Declared unit	1 m ²
Mass per declared unit	31.4 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	Deconstruction/ demolition	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 powder coated aluminium profiles, laminated double glazed glass sheets (6+6 mm) and rubber fittings. The profile painting is subcontracted, and the glass is laminated and cut to size by the supplier. Raw materials are transported to Muotolevy's production facility in Nummela, Finland, where the main manufacturing processes include machining of profiles and packing for transportation.

The manufacturing process requires electricity and wooden chips for facility heating. Diesel is used in the production. The profiles are packaged in plastics and sent to the installation site on a wooden pallet. The glazing is packed on glass racks by the supplier and transported to the site by Muotolevy.



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 average distance of transportation from production plant to building site (A4) is 76 km by lorry, calculated as weighted average from the sales data. Vehicle capacity utilization volume factor is assumed to be 100 % which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not considered 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, the volume capacity utilisation factor is assumed to be 100 % for the nested packaged products. Transported weight includes packages for both glass and profiles.

The profiles are cut to size at the construction site. Installation (A5) includes energy use from battery-operated hand tools and the treatment of profile cuttings and package waste. Small amount of installation materials like screws and fittings, and the treatment of seal cutting waste have been excluded due to small amounts.

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 the life cycle, the product is dismantled. The energy use of dismantling (C1) has been considered as the energy consumption estimate for battery-operated hand tools. It is assumed that the demolition waste is collected at site and transported (C2) to the waste treatment center for recycling or energy recovery (C3), or for final disposal (C4). Transportation distance and method to treatment or disposal is assumed as 42 km by lorry. For aluminium a recycling rate 81 % is assumed (International Aluminium Institute). The national average recycling rate of construction waste (56%) has been used for the laminated flat glass (Statistics Finland). Rubber seals are assumed to be incinerated.

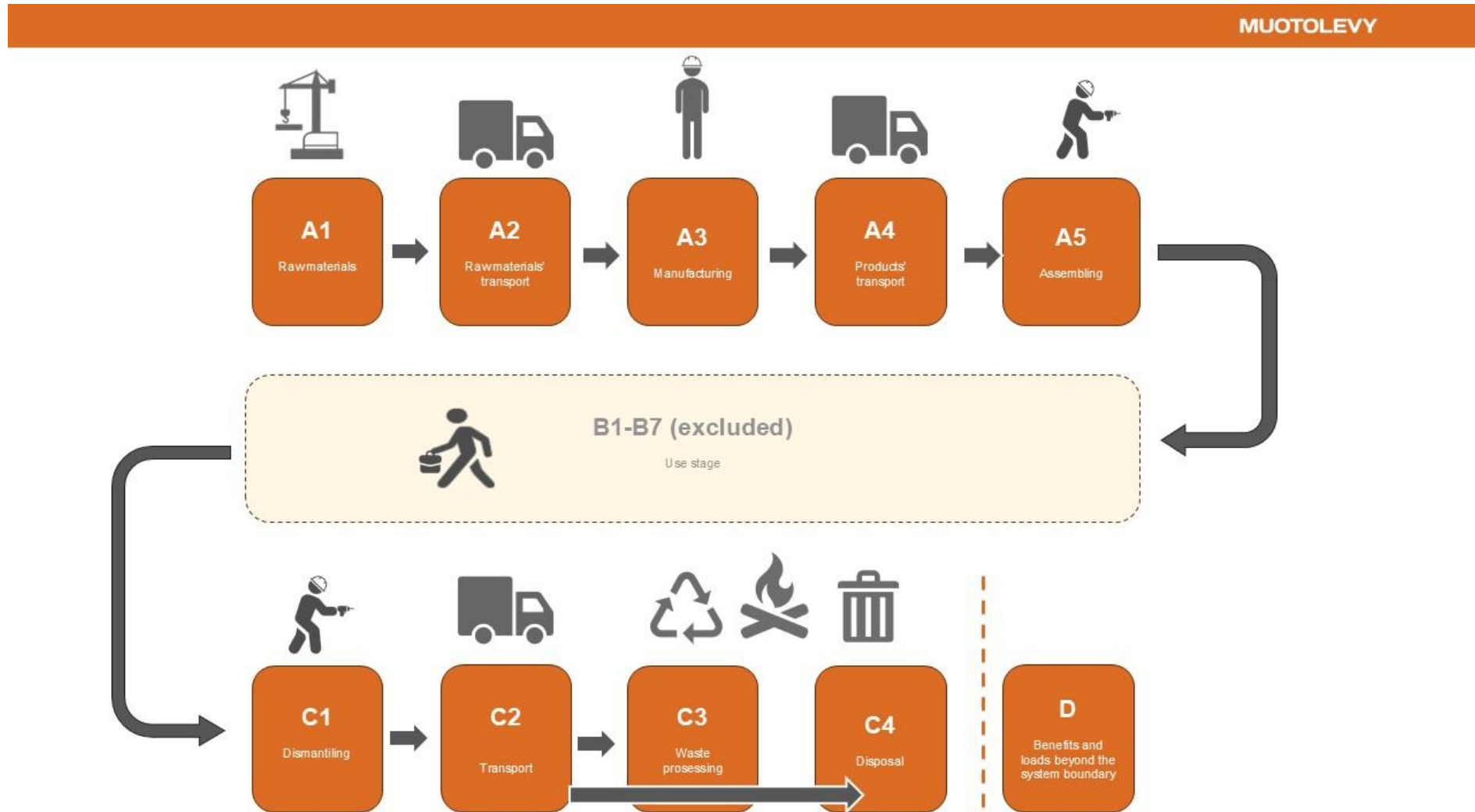
The benefits and loads of recycling (glass, aluminium profiles) and energy recovery from waste incineration are included in Module D. Recycled glass is assumed to be used to produce foam glass aggregate and replace virgin materials in construction (soil construction and insulation). Recycled aluminium is assumed to replace the production of primary aluminium.

References for recycling rates:

[International Aluminium Institute](#)

[Statistics Finland](#)

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 material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

This EPD is product and factory specific and does not contain average calculations. However, the material consumption per m² has been indicatively assessed for minimum and maximum sized product to ensure the results are descriptive for product in different installation sizes.

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 v3.10 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	6,29E+01	1,06E+00	9,98E-01	6,49E+01	6,49E-01	7,50E-01	MND	MND	MND	MND	MND	MND	MND	2,18E-02	2,51E-01	7,69E-01	1,59E-01	-1,40E+01
GWP – fossil	kg CO ₂ e	6,28E+01	1,06E+00	1,44E+00	6,53E+01	6,49E-01	2,94E-01	MND	MND	MND	MND	MND	MND	MND	2,14E-02	2,51E-01	7,68E-01	1,59E-01	-1,38E+01
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-4,55E-01	-4,55E-01	0,00E+00	4,55E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO ₂ e	7,15E-02	4,13E-04	1,10E-02	8,29E-02	2,05E-04	8,75E-04	MND	MND	MND	MND	MND	MND	MND	4,30E-04	8,34E-05	1,16E-04	9,19E-05	-1,85E-01
Ozone depletion pot.	kg CFC-11e	2,75E-06	1,96E-08	1,07E-07	2,88E-06	1,30E-08	9,80E-10	MND	MND	MND	MND	MND	MND	MND	4,06E-10	4,99E-09	3,11E-09	4,02E-09	-1,82E-07
Acidification potential	mol H ⁺ e	4,72E-01	1,21E-02	1,25E-02	4,96E-01	1,28E-03	2,37E-04	MND	MND	MND	MND	MND	MND	MND	7,87E-05	5,22E-04	1,00E-03	1,09E-03	-6,78E-02
EP-freshwater ²⁾	kg Pe	1,78E-03	6,87E-06	4,64E-05	1,83E-03	4,90E-06	1,90E-06	MND	MND	MND	MND	MND	MND	MND	6,85E-07	1,96E-06	4,48E-06	1,87E-06	-3,12E-04
EP-marine	kg Ne	7,86E-02	3,06E-03	4,71E-03	8,64E-02	2,92E-04	5,62E-05	MND	MND	MND	MND	MND	MND	MND	1,51E-05	1,22E-04	3,10E-04	4,15E-04	5,53E-05
EP-terrestrial	mol Ne	9,17E-01	3,40E-02	5,30E-02	1,00E+00	3,24E-03	6,44E-04	MND	MND	MND	MND	MND	MND	MND	1,87E-04	1,35E-03	3,34E-03	4,50E-03	1,23E-02
POCP (“smog”) ³⁾	kg NMVOCe	2,76E-01	1,07E-02	1,55E-02	3,03E-01	2,15E-03	1,88E-04	MND	MND	MND	MND	MND	MND	MND	5,60E-05	8,68E-04	1,13E-03	1,55E-03	-1,24E-01
ADP-minerals & metals ⁴⁾	kg Sbe	5,19E-04	2,41E-06	7,41E-06	5,29E-04	2,13E-06	3,84E-07	MND	MND	MND	MND	MND	MND	MND	1,16E-07	8,35E-07	1,08E-06	3,58E-07	8,56E-05
ADP-fossil resources	MJ	8,43E+02	1,47E+01	3,78E+01	8,96E+02	9,07E+00	2,11E+00	MND	MND	MND	MND	MND	MND	MND	9,72E-01	3,53E+00	2,52E+00	3,45E+00	-5,28E+02
Water use ⁵⁾	m ³ e depr.	1,84E+01	6,27E-02	9,22E-01	1,94E+01	4,36E-02	6,19E-02	MND	MND	MND	MND	MND	MND	MND	2,66E-02	1,73E-02	4,18E-02	1,82E-02	-3,67E+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	4,41E-06	7,41E-08	8,36E-07	5,32E-06	4,01E-08	1,77E-09	MND	MND	MND	MND	MND	MND	MND	4,75E-10	1,84E-08	1,55E-08	2,45E-08	-1,21E-06
Ionizing radiation ⁶⁾	kBq 11235a	1,56E+00	5,33E-03	6,16E-01	2,18E+00	4,82E-03	5,42E-02	MND	MND	MND	MND	MND	MND	MND	2,67E-02	1,63E-03	5,81E-03	1,27E-03	-2,56E-01
Ecotoxicity (freshwater)	CTUe	3,90E+02	3,24E+00	6,88E+00	4,00E+02	2,38E+00	3,27E-01	MND	MND	MND	MND	MND	MND	MND	8,84E-02	9,61E-01	1,28E+00	5,22E+01	4,28E+01
Human toxicity, cancer	CTUh	1,49E-07	5,99E-09	8,71E-09	1,64E-07	3,89E-09	3,03E-10	MND	MND	MND	MND	MND	MND	MND	8,37E-11	1,78E-09	1,11E-09	8,77E-10	-6,50E-09
Human tox. non-cancer	CTUh	4,44E-07	7,88E-09	2,10E-08	4,73E-07	5,42E-09	1,04E-09	MND	MND	MND	MND	MND	MND	MND	2,30E-10	2,28E-09	3,44E-09	2,04E-09	-2,87E-08
SQP ⁷⁾	-	2,05E+02	9,73E+00	4,57E+01	2,61E+02	4,67E+00	9,41E-01	MND	MND	MND	MND	MND	MND	MND	3,13E-01	2,13E+00	3,84E+00	8,01E+00	1,37E+02

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	2,02E+02	1,97E-01	2,11E+01	2,23E+02	1,75E-01	4,62E-01	MND	MND	MND	MND	MND	MND	MND	3,46E-01	6,06E-02	1,98E-01	5,01E-02	-3,10E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,98E+00	3,98E+00	0,00E+00	-3,98E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,02E+02	1,97E-01	2,51E+01	2,27E+02	1,75E-01	-3,52E+00	MND	MND	MND	MND	MND	MND	MND	3,46E-01	6,06E-02	1,98E-01	5,01E-02	-3,10E+01
Non-re. PER as energy	MJ	8,38E+02	1,47E+01	3,44E+01	8,87E+02	9,07E+00	-9,33E-01	MND	MND	MND	MND	MND	MND	MND	9,72E-01	3,53E+00	-5,32E+00	2,82E+00	-2,15E+02
Non-re. PER as material	MJ	5,28E+00	0,00E+00	3,44E+00	8,73E+00	0,00E+00	-3,44E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-5,28E+00	0,00E+00
Total use of non-re. PER	MJ	8,44E+02	1,47E+01	3,78E+01	8,96E+02	9,07E+00	-4,38E+00	MND	MND	MND	MND	MND	MND	MND	9,72E-01	3,53E+00	-5,32E+00	-2,47E+00	-2,15E+02
Secondary materials	kg	2,08E-01	6,46E-03	4,04E-02	2,54E-01	3,97E-03	3,90E-04	MND	MND	MND	MND	MND	MND	MND	1,02E-04	1,64E-03	1,34E-03	1,26E-03	1,33E+01
Renew. secondary fuels	MJ	5,90E-02	6,18E-05	1,68E+01	1,68E+01	4,04E-05	9,10E-06	MND	MND	MND	MND	MND	MND	MND	3,45E-07	2,07E-05	4,13E-05	2,34E-05	2,56E-01
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	1,38E+00	1,75E-03	2,56E-02	1,40E+00	1,23E-03	1,81E-03	MND	MND	MND	MND	MND	MND	MND	8,43E-04	4,74E-04	-7,15E-03	-5,10E-02	-8,68E-01

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	4,65E+00	2,04E-02	7,64E-02	4,74E+00	1,18E-02	5,43E-03	MND	MND	MND	MND	MND	MND	MND	1,32E-03	5,15E-03	1,13E-02	6,94E-03	-7,53E-01
Non-hazardous waste	kg	1,28E+02	3,78E-01	3,18E+00	1,32E+02	2,79E-01	1,83E-01	MND	MND	MND	MND	MND	MND	MND	3,07E-02	1,09E-01	1,05E+01	6,87E+01	1,53E+01
Radioactive waste	kg	2,44E-02	3,60E-06	2,85E-04	2,47E-02	3,47E-06	2,47E-05	MND	MND	MND	MND	MND	MND	MND	1,20E-05	1,14E-06	4,59E-06	8,13E-07	-3,61E-04

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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	7,69E-01	0,00E+00	0,00E+00	7,69E-01	0,00E+00	3,46E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,74E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	1,35E-02	0,00E+00	0,00E+00	1,35E-02	0,00E+00	3,62E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	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	2,40E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,85E+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	6,27E+01	1,05E+00	1,47E+00	6,52E+01	6,45E-01	2,97E-01	MND	MND	MND	MND	MND	MND	MND	2,18E-02	2,49E-01	7,76E-01	1,58E-01	-1,38E+01
Ozone depletion Pot.	kg CFC ₁₁ e	2,40E-06	1,56E-08	7,61E-08	2,49E-06	1,03E-08	8,53E-10	MND	MND	MND	MND	MND	MND	MND	3,58E-10	3,97E-09	2,50E-09	3,21E-09	-3,58E-07
Acidification	kg SO ₂ e	3,89E-01	9,67E-03	9,15E-03	4,08E-01	1,03E-03	1,87E-04	MND	MND	MND	MND	MND	MND	MND	6,28E-05	4,20E-04	7,73E-04	8,08E-04	-6,32E-02
Eutrophication	kg PO ₄ ³ e	7,47E-02	1,25E-03	8,33E-03	8,43E-02	2,45E-04	3,88E-05	MND	MND	MND	MND	MND	MND	MND	1,06E-05	1,06E-04	1,96E-04	3,47E-04	1,55E-02
POCP (“smog”)	kg C ₂ H ₄ e	2,20E-02	5,48E-04	1,26E-03	2,38E-02	1,08E-04	1,36E-05	MND	MND	MND	MND	MND	MND	MND	4,35E-06	4,44E-05	5,74E-05	6,75E-05	-5,50E-02
ADP-elements	kg Sbe	4,21E-04	2,35E-06	7,37E-06	4,31E-04	2,07E-06	3,84E-07	MND	MND	MND	MND	MND	MND	MND	1,17E-07	8,15E-07	1,07E-06	3,47E-07	7,93E-05
ADP-fossil	MJ	7,73E+02	1,47E+01	3,70E+01	8,25E+02	9,07E+00	2,04E+00	MND	MND	MND	MND	MND	MND	MND	9,35E-01	3,53E+00	2,52E+00	3,45E+00	-5,28E+02

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	6,28E+01	1,06E+00	1,44E+00	6,53E+01	6,49E-01	2,94E-01	MND	MND	MND	MND	MND	MND	MND	2,14E-02	2,51E-01	7,68E-01	1,59E-01	-1,38E+01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

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.

Nemanja Nedic, as an authorized verifier acting for EPD Hub Limited
24.11.2024



ANNEX 1: CARBON FOOTPRINT DATA FOR DIFFERENT GLASS THICKNESS

The reference product is available also in glass thickness 8+8 mm. Corresponding gwp -values are presented in the table below:

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 ₂ e	8,01E+01	1,06E+00	9,98E-01	8,22E+01	8,25E-01	7,50E-01	MND	MND	MND	MND	MND	MND	MND	2,18E-02	3,28E-01	8,12E-01	2,06E-01	-1,55E+01
GWP – fossil	kg CO ₂ e	8,00E+01	1,06E+00	1,44E+00	8,25E+01	8,25E-01	2,94E-01	MND	MND	MND	MND	MND	MND	MND	2,14E-02	3,27E-01	8,11E-01	2,06E-01	-1,54E+01

Glass thickness affects the results in A1, A2 and A4 (amount of glass in raw materials and transport), as well as in C2-C4 (amount of glass waste) and in module D (benefits of glass recycling).