AGC GLASS EUROPE

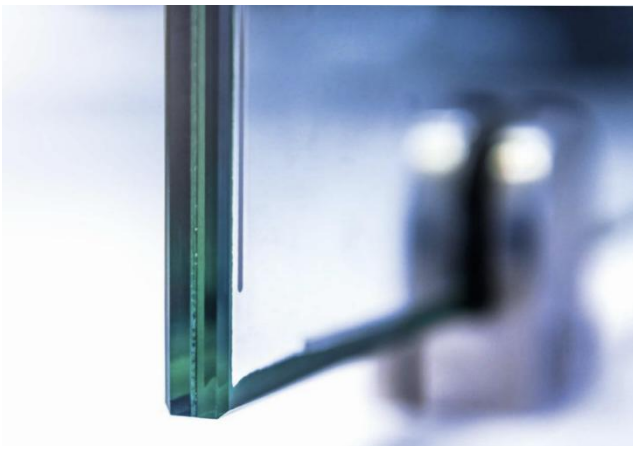
ENVIRONMENTAL AND HEALTH PRODUCT DECLARATION (EPD)

FINEO 8 standard

AGC vacuum insulating glazing

In compliance with ISO 14025:2010 and EN 15804+A2:2019

February 2026



Publication date: February 2026

Disclaimer

The information contained in this declaration are provided under the responsibility of AGC Glass Europe in accordance with EN 15804+A2.

Any use, in whole or in part, of the information provided in this document must at least be accompanied by the full reference of the original EPD and its producer, who will be able to provide a complete copy.

CEN standard EN 15804+A2 serve as the rules for defining product categories (PCR).

Reading guide

Reading example: -9,0 E -03 = -9,0 x 10^{-3}

The following display rules apply:

- When the inventory calculation result is zero, then the value zero is displayed.
- Abbreviation used:

  EPD: Environmental Product Declaration

  FU: Functional Unit

  LCA: Life Cycle Assessment

  NMD: Nationale Milieudatabase

  PCR: Product Category Rule

  RSL: Reference Service Life
- The units used are specified in front of each flow: kilogram “kg”, gram “g”, kilowatt-hour “kWh”, megajoule “MJ”, square meter “m2”, kelvin “K”, watt “W”, kilometer “km”, millimeter “mm”.

Results for environmental impacts and indicators of resource use, waste categories and outflows are presented with three significant figures and in scientific format.

All positive values (above zero) correspond to environmental impacts, while negative values (below zero) correspond to environmental benefits. This approach applies to all modules, including module D. When the value of module D is greater than 0, it is an additional impact to be added to the impacts of the other modules in the life cycle.

Comparability of EPD for construction products

Construction product EPDs are not comparable if they do not comply with EN 15804+A2.

Standard EN 15804+A2 defines in § 5.3 Comparability of EPDs for construction products, the conditions under which construction products can be compared, based on the information provided by the EPD:

"Consequently, a comparison of the environmental performance of construction products using EPD information must be based on the use of the products and their impacts on the building and must take into account the entire life cycle (all information modules)".

NOTE 1

Outside the framework of a building's environmental assessment, EPDs are not tools for comparing construction products and services.

NOTE 2

To assess the contribution of buildings to sustainable development, a comparison of environmental aspects and impacts must be undertaken in conjunction with socio-economic aspects and impacts relating to the building.

NOTE 3

To interpret a comparison, reference values are required.

General information

Product name:	This EPD covers only the product – **FINEO 8 Standard** (other FINEO families are not included in this EPD)
Date of Issue:	January 2026
Date of verification:	January 2026
Validity:	5 years
Product unit:	1 m^2
Owner of the declaration	**AGC Glass Europe** Official address: Avenue Jean Monnet, 4 1348 Louvain-la-Neuve | Belgium Manufacturing site: Mondron Street 30/90, 6042 Lodelinsart Charleroi, Belgium
Conductor of the LCA	**WeLOOP** 254 rue du Bourg, 59130 Lambersart, France https://www.weloop.org/fr/
Verification:	Independent verification by **external** third-party verifier **G.F. van der Burgh, MSc, Agrodome B.V.**
Type of EPD	Individual Cradle-to-grave

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR) and NMD Bepalingsmethode 1.2
Product Category Rules (PCR): ISO 14025:2010, EN 15804+A2:2019, EN 17074:2019
Life Cycle Assessment (LCA)
LCA accountability: *WeLOOP*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: X Approved by: Stichting NMD, the Netherlands

• Functional unit and product description

1. Description of the functional unit

To provide thermal insulation over a 1 m^2 surface with a Ug performance of 0.7 $W/m^2 \cdot K$ according to ISO 19916-1:2018 and a light transmittance performance of 79% over a period of 50 years.

The reference flow is 1 m^2 of a FINEO 8 standard product.

Note: The declared service life of the product is 50 years, in line with the reference service life (RSL) of the building. FINEO meets and exceeds the durability tests of ISO 19916-1:2018. This standard specifies the methods for assessing the durability of the thermal insulation performance of vacuum insulating glazing. However, based on extensive laboratory testing, AGC has demonstrated that FINEO can achieve a service life of at least 60 years. Nevertheless, to remain consistent with the building's RSL, a 50-year service life is declared.

2. Description of the product and the packaging

FINEO products are composed of two sheets of float glass, separated by a vacuum gap (~0.1 mm), with pillars, a sealing frit, and a getter (gas absorber), with no evacuation hole.
FINEO delivers thermal performance equal to or better than standard triple glazing, while being 3 to 4 times thinner, lighter, able to harness solar heat, and entirely lead-free.

3. Description of product usage

The product can be used to meet any project requirement in terms of thermal insulation, from restoration needs to high-performance new construction. FINEO is used to improve the thermal and acoustic insulation of windows, glazed doors, facades, roofs, conservatories, skylights, partitions, and specific glazed assemblies.

4. Main performance of the functional unit

Thermal performance Ug of 0.7 $W/m^2 \cdot K$.

5. Description of main product components and/or materials

The main components of the FINEO vacuum insulating glazing are float glass, pillars, a sealing frit, and a getter.

Table 1: The main components of the FINEO vacuum insulating glazing.

FINEO 8 standard	Quantity (kg/FU)
Float glass	**20**
Others	**0.06**
Wooden pallet (packaging)	*1.8*
Steel (packaging)	*0.54*
PE film (packaging)	*0.01*
HDPE (packaging)	*0.02*
PU (packaging)	*0.03*
SBR (packaging)	*0.02*

6. Substances on REACH candidate list (if greater than 0.1% by mass)

At the date of issue of this declaration, the FINEO 8 standard product covered by this declaration do not contain more than 0.1% of substances on the REACH candidate list.

7. Evidence of fitness for use

FINEO products are CE-marked in accordance with EAD 300021-00-0404 and ETA 20/0048. Their fit for purpose is verified by using an AGC software following EN 16612. FINEO products are also described in the French Technical Application Document DTA 6/23-2441_V2, issued by CSTB, and it provides construction stakeholders with elements for assessing the suitability of innovative building products like FINEO.

8. Distribution channel

This declaration concerns a vacuum insulating glazing intended for professional clients (B2B). The primary target audience is therefore B2B, although this document may also be used by end consumers (B2C).

9. Description of reference service life

The reference service life (RSL) of glass is 50 years.

Table 2: Parameters describing the reference conditions under which the product is to be used, to justify the RSL.

Parameter	Value
Reference service life	50 years
Declared product properties (at factory gate)	Ug (ISO 19916-1:2018): 0.7 W/m²·K Light transmittance (EN 410): 79%
Theoretical application parameters (if imposed by the manufacturer), including references to appropriate requirements and application codes	EN 19916-1: 2018
Assumed quality of installation work	
Outdoor environment	Not applicable
Indoor environment	Not applicable
Use conditions	Not applicable
Maintenance scenario	Water and detergent

10. Biogenic carbon content (Stock C)

FINEO 8 standard does not contain biogenic carbon. Therefore, the biogenic carbon stock is 0 kg C/FU. However, the packaging associated with the product contains 0.889 kg C/FU.

Table 3: Biogenic carbon content.

Biogenic carbon content	Value per functional unit
Biogenic carbon content of product (at gate)	0 kg C
Biogenic carbon content of associated packaging (at gate)	8.89E-01 kg C

• Life cycle stages

The environmental assessment is cradle-to-grave, including module D.
The life cycle stages related to installation (A5) and use stages (B1-B7) are modelled based on scenarios defined in the standard EN 17074:2019.
The most impactful process is the raw material supply, particularly the production of the glass used to manufacture FINEO 8 standard.

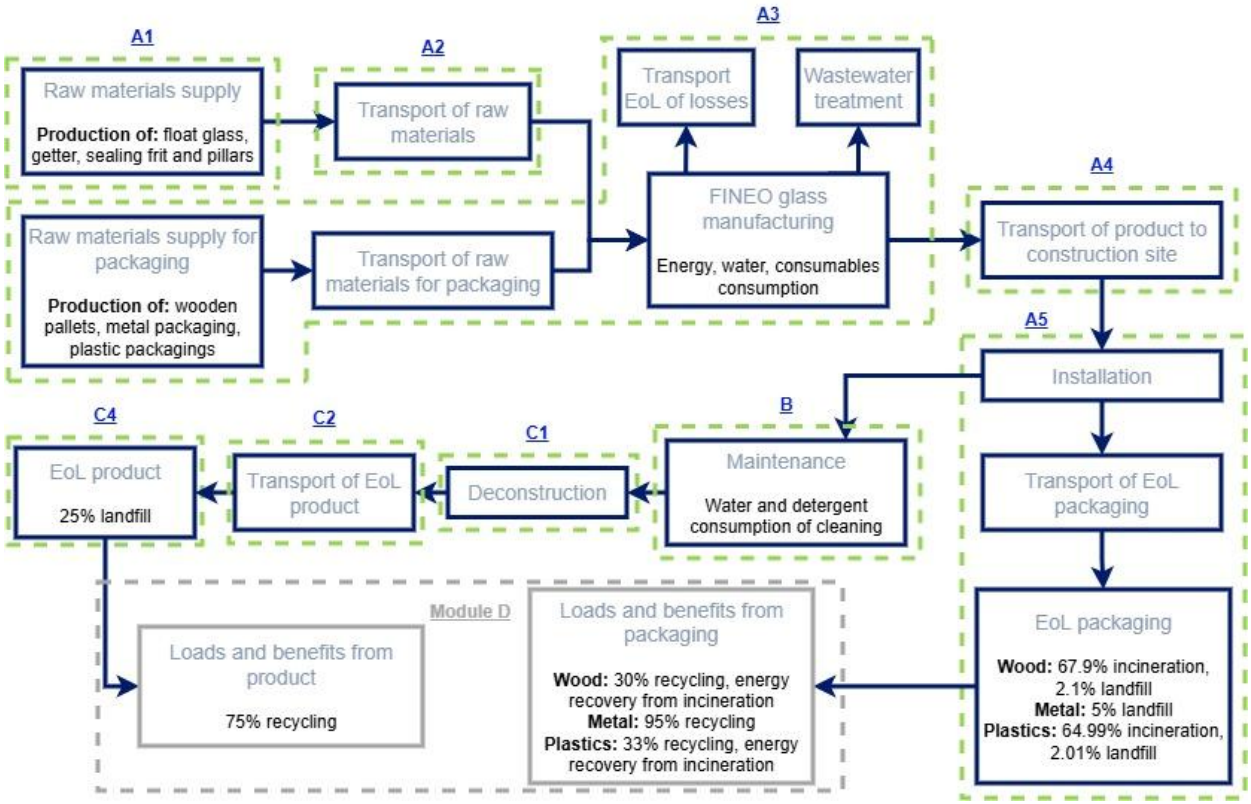


Figure 1: System boundaries overview.

	Production	Construction		Use							End Of Life				Benefits & loads beyond system boundaries
	Total production A1 to A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B4 Rehabilitation	B6 Energy consumption	B7 Water consumption	C1 Deconstruction /demolition	C2 Transports	C3 Waste treatments	C4 Disposal	D
Declared modules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Figure 2: Visual description of system boundaries (X = included in LCA).

Production stage, A1-A3

Module A1-A3 covers the production and transport of inputs for the manufacturing of the vacuum insulating glazing. It also includes various consumptions and emissions related to the production process such as raw materials (previously mentioned), energy (electricity, natural gas), water, and waste.

The production process consists of the following steps: preparation of the glass pane, placement of micro-spacers, application of the getter, application of the sealing edge, assembly of the glass panes, sealing by heat treatment, and final product finishing.

The approach to modelling the electricity used during production is based on AGC's guarantee of origin. The data used for this modelling are BE: Electricity production, high voltage, wind, >3MW turbine, onshore (Ecoinvent) and BE: Electricity production, low voltage, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted (Ecoinvent).

The product is packaged.

Allocations

Allocation rules set by the standard have been followed. The impacts of vacuum insulating glazing production are allocated by mass allocation at the production site level.

Construction stage, A4-A5

This stage accounts for the transport of glass from the site in Belgium to the Dutch market, with an average distance of 300 km.

1. Parameters relating to raw materials transport

The transport considered in this study corresponds to the transport of glass from the AGC Glass factory in Belgium to its direct customers. Transport is carried out by semi-trailer trucks inloader, dedicated to transporting glass plates.

Table 4: Parameters for transporting glass products.

Parameter	Value
Vehicle	50% RER: Transport, freight, lorry 7.5-16 metric ton, EURO5 50% RER: Transport, freight, lorry >32 metric ton, EURO5
Distance to construction site	300 kilometer
Capacity utilization (including empty returns)	50%
Bulk density of the transported products	NA
Density utilization coefficient	1

2. Building installation parameters

As stated in the standard EN 17074:2019, module A5 is not applicable. Glass products are delivered in their final configuration and "ready to be installed." No waste other than packaging waste is generated. The end-of-life scenario for packaging is conservative and follows Annex C (Eurostat, 2020) documentation.

Table 5: End-of-life parameters for packaging waste.

End of Life	Recycling	Incineration	Landfill
Wooden pallet	30%	67.9%	2.1%
Steel	95%	0%	5%
Plastic packaging	33%	64.99%	2.01%

Table 6: Description of Building installation parameters and waste treatment.

Parameters	Values
Auxiliary inputs for installation	Not applicable
Water use	0 m^3
Use of other resources	0 kg
Quantitative description of energy type and consumption during installation process	0 kWh
Material waste on construction site before waste treatment generated by product installation (specified by type)	Wood pallet: 1.8 kg/FU Steel: 0.54 kg/FU PE film: 0.01 kg/FU HDPE: 0.02 kg/FU PU: 0.03 kg/FU SBR: 0.02 kg/FU
Output materials (specified by type) produced by waste treatment on the construction site (specified by route) *	1.11E+00 kg recycling/FU 1.22E+00 kg incineration/FU 1.17E-01 kg landfill/FU 0 kg reuse/FU
Direct emissions to ambient air, soil, and water	0 kg

* For more details about the End-of-life parameters for packaging waste check Table 5.

- ## Use stage, B1-B7

The only module considered in the life cycle stage is that relating to maintenance (B2); the product must be cleaned with detergent and water for maintenance. The product does not cause any consumption or emissions during its use (B1). Repair (B3), replacement (B4) and rehabilitation (B5) are not considered. FINEO does not require these operations during their lifetime in normal use. Finally, the product does not need energy (B6) nor water (B7) during its use stage.

Table 7: Maintenance parameters.

Parameter	Value
Maintenance process	Washing with detergent and water
Maintenance cycle	Once a year for 50 years
Net consumption of fresh water during maintenance	10 L/FU
Detergent consumption	0.5 kg/FU
Wastewater treatment	10 L/FU
Net use of fresh water during maintenance	0.01 m^3/FU
Energy input during maintenance	0 kWh/FU

- ## End of Life stage, C1-C4

No mechanical steps are involved in the dismantling and demolition of FINEO products (C1). End-of-life therefore includes transport from the building site to the landfill and 30% disposal of the product.

Table 8: End-of-life parameters.

Parameter	Value
Individually collected waste	2.01E+01 kg/FU
Mixed waste collected	0 kg
Reuse	0 kg
Recycling	1.40E+01 kg/FU
Incineration	0 kg
Landfill	6.02E+00 kg/FU
End-of-life transport	Landfill: 50 km Recycling: 150 km

This transport is carried out by EURO 5, >32t total weight lorry.

- ## Benefits and loads beyond system boundaries (module D)

Recycling and incineration of packaging with energy recovery are considered as benefits and loads beyond the system boundaries. Credits from incineration with energy recovery are associated with electricity and heat production, using electricity from municipal incineration and heat derived from natural gas. Since natural gas is the cleanest fossil fuel, the results are considered conservative. The efficiencies used are presented in the following table.

Table 9: Module D parameters.

Materials	LHV (MJ/kg)	Heat efficiency	Electricity efficiency
Wood	13.99	25.57%	12.997%
Plastics	30.79	28.51%	15.84%

Table 10: Benefits beyond system boundaries.

Recovered materials leaving system boundaries	Recycling processes beyond system boundaries	Materials/energy saved	Associated quantities
Waste wood pallets	Recycling	Wood chips	5.40E-01 kg/FU
Waste wood pallets	Incineration	Electricity	2.13E+00 MJ/FU
Waste wood pallets	Incineration	Heat	4.27E+00 MJ/FU
Steel	Recycling	Steel	5.13E-01 kg/FU
Plastic packaging waste	Recycling	Plastic	2.64E-02 kg/FU
Plastic packaging waste	Incineration	Electricity	6.30E-03 MJ/FU
Plastic packaging waste	Incineration	Heat	1.23E-02 MJ/FU

• Information regarding life cycle assessment calculation

Table 11: Life Cycle Assessment calculation information.

PCR used	ISO14025:2010 EN 15804+A2:2019 EN 17074:2019 (as source of information) NMD Bepalingsmethode 1.2 (2025)
System boundaries	The assessment covers the full life cycle, from cradle to grave, including module D. The system boundary requirements defined by EN 15804+A2 have been fully met.
Allocations	This EPD complies with the allocation rules set by the applicable standards. Surface-based allocation was applied at the production site level. Recycled content allocation approaches (attribution) and/or biomass balance (BMB) methods such as the "mass balance credits" method and/or the "Book and Claim" approach, as defined in ISO 22095, are not permitted within the framework of ECO EPDs.
Geographical representativeness and temporal representativeness of primary data	Country of production: Belgium Country of installation/use: Netherlands Primary data: 2024 Secondary database(s): Ecoinvent 3.6 for Set 1 and Ecoinvent 3.9.1 for Set 2 LCA software: Simapro 10.2.0.3
Geographical representativeness and temporal representativeness of background data	The secondary data are primarily sourced from the Ecoinvent 3.9.1 database of the LCA software Simapro (version 10.2.0.3). Simapro was also used for life cycle modelling and indicator calculations. The EN 15804+A2 indicator set with characterization factors based on EF 3.1 was applied. All background data used are primarily less than 10 years old at the time of data collection.
Cut-off criteria	All known constituents of the product and its packaging have been considered. The impacts of capital goods and infrastructure have been excluded. Flows related to human activities, such as employee transportation and administrative operations, are excluded in accordance with EN 15804+A2.
Variability of results	Not applicable.

Data

1. Data quality

The data used for the LCA are provided by the manufacturer. The data about the process and products are based upon frequent contact with the production site to guarantee that this EPD is based on the most up-to-date production data. Missing data was collected from Ecoinvent version 3.9.1.

Table 12: EPD representativeness.

Geographic	This EPD is representative of FINEO 8 Standard product produced in Belgium and used in the Netherlands.
Technological	This EPD is representative of FINEO 8 Standard.
Temporal	This EPD is representative of production in 2024.
Variability	Not applicable.

2. Period of data collection

The data was collected and updated in 2024.

3. Database used for background data

Ecoinvent version 3.9.1 was used.

4. Energy mix

The power mix used to manufacture FINEO products follows the Guarantee of Origin for the Londelinsart plant. The Dutch energy mix for municipal incineration is used to declare the benefits beyond the system boundaries (module D).

- Life Cycle Assessment results

Table 13: Reference Environmental impacts.

REFERENCE ENVIRONMENTAL IMPACT INDICATORS															
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Climate Change - Total *kg CO_2 eq./FU*	3,50E+01	1,14E+00	3,30E+00	0,00E+00	1,21E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,08E-02	0,00E+00	4,22E-02	-2,79E+00
Climate Change – Fossil *kg CO2 eq./FU*	3,83E+01	1,14E+00	4,15E-02	0,00E+00	4,99E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,08E-02	0,00E+00	4,21E-02	-2,79E+00
Climate Change – Biogenic *kg CO_2 eq./FU*	-3,26E+00	0,00E+00	3,26E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Climate Change - Land Use and Land Use Change *kg CO_2 eq./FU*	2,27E-02	5,27E-04	1,22E-05	0,00E+00	7,10E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,80E-06	0,00E+00	2,56E-05	-2,52E-03
Ozone depletion *kg of CFC 11 eq./FU*	1,09E-05	2,49E-08	6,48E-10	0,00E+00	5,19E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,55E-10	0,00E+00	1,07E-09	-4,51E-08
Acidification *mole of H+ eq./FU*	2,03E-01	3,64E-03	2,53E-04	0,00E+00	6,70E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,01E-05	0,00E+00	3,14E-04	-2,43E-02
Aquatic eutrophication, freshwater *kg of P eq./FU*	4,94E-04	9,05E-06	4,08E-07	0,00E+00	6,59E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,68E-07	0,00E+00	4,50E-07	-1,88E-04
Aquatic eutrophication, marine *kg N eq./FU*	4,42E-02	1,24E-03	1,21E-04	0,00E+00	6,72E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,40E-05	0,00E+00	1,20E-04	-3,30E-03

REFERENCE ENVIRONMENTAL IMPACT INDICATORS

Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Terrestrial eutrophication *mole of N eq./FU*	4,96E-01	1,32E-02	1,22E-03	0,00E+00	2,46E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,56E-04	0,00E+00	1,30E-03	-6,54E-02
Photochemical ozone formation *kg NMCOV eq./FU*	1,20E-01	5,53E-03	3,42E-04	0,00E+00	3,45E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,09E-04	0,00E+00	4,37E-04	-1,24E-02
Depletion of abiotic resources (minerals and metals)[1] *kg Sb eq./FU*	3,01E-04	3,47E-06	7,07E-08	0,00E+00	8,13E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,62E-08	0,00E+00	8,40E-08	-4,62E-05
Depletion of abiotic resources (fossil fuels)[1] *MJ/FU*	4,63E+02	1,62E+01	3,82E-01	0,00E+00	5,32E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,05E-01	0,00E+00	9,54E-01	-3,55E+01
Water Requirement[1] *m^3 of deprivation eq. in the world/FU*	-3,12E+01	6,66E-02	-1,20E-02	0,00E+00	4,88E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-03	0,00E+00	4,22E-02	-2,97E+00

[1] The results of this environmental impact indicator should be used with caution because the uncertainties in these results are high or because experience with this indicator is limited.

Table 14: Resource use.

RESOURCE USE														
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Use of renewable primary energy, excluding renewable primary energy resources used as feedstock - *MJ/FU*	2,91E+01	0,00E+00	1,71E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of Renewable Primary Energy Resources as Materials - *MJ/FU*	2,53E+01	0,00E+00	-1,68E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as feedstock) - *MJ/FU*	5,44E+01	0,00E+00	3,04E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as feedstock - *MJ/FU*	4,10E+02	0,00E+00	1,60E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable primary energy resources as raw materials - *MJ/FU*	2,47E+00	0,00E+00	-1,60E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as feedstock) - *MJ/FU*	4,13E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of secondary material *kg/FU*	2,67E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

RESOURCE USE														
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Use of Renewable Secondary Fuels *MJ/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of Non-Renewable Secondary Fuels *MJ/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net Freshwater Use *m^3/FU*	-7,02E-01	2,41E-03	-2,05E-04	0,00E+00	4,22E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,78E-05	0,00E+00	1,02E-03	-7,40E-02

Table 15: Waste Category.

WASTE CATEGORY														
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Hazardous waste disposed *kg/FU*	8,20E-04	1,03E-04	2,15E-06	0,00E+00	2,88E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,89E-06	0,00E+00	4,95E-06	-1,60E-04
Non-hazardous waste disposed *kg/FU*	4,98E+00	9,08E-01	1,48E-01	0,00E+00	1,86E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,67E-02	0,00E+00	4,02E+00	-6,15E-01
Radioactive waste disposed *kg/FU*	8,87E-03	5,97E-06	1,16E-07	0,00E+00	7,34E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,29E-08	0,00E+00	1,71E-07	-7,93E-05

Table 16: Outgoing flows.

OUTGOING FLOWS															
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Components for reuse *kg/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling *kg/FU*	2,58E+00	0,00E+00	1,08E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,50E+01	0,00E+00
Materials for energy recovery *kg/FU*	4,88E-02	0,00E+00	1,27E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Electrical power supplied to the outside *MJ/FU*	2,45E-02	0,00E+00	2,48E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Steam energy supplied to the outside *MJ/FU*	4,43E-02	0,00E+00	4,83E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Gas and process energy supplied externally *MJ/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table 17: Optional indicators

OPTIONAL INDICATORS														
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Particulate matter *Diseases incidences*	3,64E-07	8,91E-08	3,69E-09	0,00E+00	1,02E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,10E-09	0,00E+00	7,01E-09	-2,84E-07
Ionising radiation, human health *kBq U235 eq.*	9,30E-02	9,00E-03	1,82E-04	0,00E+00	1,04E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,47E-04	0,00E+00	2,95E-04	-9,95E-02
Ecotoxicity, freshwater *CTUe*	7,22E+01	8,09E+00	2,75E-01	0,00E+00	3,08E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,47E-01	0,00E+00	4,33E-01	-9,66E+01
Human toxicity, cancer *CTUh*	2,82E-08	4,83E-10	5,79E-11	0,00E+00	1,63E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,02E-12	0,00E+00	2,38E-11	4,37E-09
Human toxicity, non-cancer *CTUh*	1,45E-06	1,11E-08	2,59E-09	0,00E+00	3,66E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,19E-10	0,00E+00	2,51E-10	-4,66E-08
Land use *Pt*	2,35E+02	1,09E+01	3,04E-01	0,00E+00	5,30E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,09E-01	0,00E+00	2,31E+00	-5,59E+01

Table 18: Aggregation of the different modules to create a "Total per stage" or "Total Life Cycle".

Aggregation of the different modules to achieve a "Total per stage" or "Total Life Cycle"						
Environmental impact	Production	Construction	Use	End-of-life	Total Life Cycle	D Benefits and loads beyond the boundaries of the system
Baseline environmental impact indicators						
Climate change - Total *kg CO_2 eq./FU*	3,50E+01	4,44E+00	1,21E+00	6,30E-02	4,08E+01	-2,79E+00
Climate change – Fossil *kg CO_2 eq./FU*	3,83E+01	1,18E+00	4,99E-01	6,30E-02	4,00E+01	-2,79E+00
Climate change – Biogenic *kg CO_2 eq./FU*	-3,26E+00	3,26E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Climate change - Land cover and land cover change *kg CO_2 eq./FU*	2,27E-02	5,39E-04	7,10E-01	3,54E-05	7,33E-01	-2,52E-03
Ozone depletion *kg of CFC 11 eq./FU*	1,09E-05	2,55E-08	5,19E-08	1,52E-09	1,10E-05	-4,51E-08
Acidification *mole of H+ eq./FU*	2,03E-01	3,89E-03	6,70E-03	3,84E-04	2,14E-01	-2,43E-02
Aquatic eutrophication, freshwater *kg P eq./FU*	4,94E-04	9,46E-06	6,59E-05	6,18E-07	5,70E-04	-1,88E-04
Aquatic eutrophication, marine *kg N eq./FU*	4,42E-02	1,36E-03	6,72E-03	1,44E-04	5,24E-02	-3,30E-03
Terrestrial eutrophication *mole of N eq./FU*	4,96E-01	1,44E-02	2,46E-02	1,55E-03	5,36E-01	-6,54E-02
Photochemical ozone formation *kg NMCOV eq./FU*	1,20E-01	5,87E-03	3,45E-03	5,46E-04	1,30E-01	-1,24E-02
Depletion of abiotic resources (minerals and metals)[2] *kg Sb eq./FU*	3,01E-04	3,54E-06	8,13E-06	1,40E-07	3,13E-04	-4,62E-05
Depletion of abiotic resources (fossil fuels)[2] *MJ/FU*	4,63E+02	1,66E+01	5,32E+00	1,26E+00	4,86E+02	-3,55E+01
Water requirement[2] *m^3 of deprivation eq. in the world/FU*	-3,12E+01	5,46E-02	4,88E-01	4,36E-02	-3,06E+01	-2,97E+00
Resource Utilization						
Use of renewable primary energy, excluding renewable primary energy resources used as feedstock - *MJ/FU*	2,91E+01	1,71E+01	0,00E+00	0,00E+00	4,62E+01	0,00E+00
Use of Renewable Primary Energy Resources as Materials - *MJ/FU*	2,53E+01	-1,68E+01	0,00E+00	0,00E+00	8,54E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as feedstock) - *MJ/FU*	5,44E+01	3,04E-01	0,00E+00	0,00E+00	5,47E+01	0,00E+00
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as feedstock - *MJ/FU*	4,10E+02	1,60E+00	0,00E+00	0,00E+00	4,12E+02	0,00E+00
Use of non-renewable primary energy resources as raw materials - *MJ/FU*	2,47E+00	-1,60E+00	0,00E+00	0,00E+00	8,69E-01	0,00E+00

[2] The results of this environmental impact indicator should be used with caution because the uncertainties in these results are high or because experience with this indicator is limited.

Aggregation of the different modules to achieve a "Total per stage" or "Total Life Cycle"

Environmental impact	Production	Construction	Use	End-of-life	Total Life Cycle	D Benefits and loads beyond the boundaries of the system
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as feedstock) - *MJ/FU*	4,13E+02	0,00E+00	0,00E+00	0,00E+00	4,13E+02	0,00E+00
Use of secondary material *kg/FU*	2,67E+00	0,00E+00	0,00E+00	0,00E+00	2,67E+00	0,00E+00
Use of Renewable Secondary Fuels *MJ/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of Non-Renewable Secondary Fuels *MJ/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net Freshwater Use *m^3/FU*	-7,02E-01	2,21E-03	4,22E-02	1,06E-03	-6,57E-01	-7,40E-02
Waste Category						
Hazardous Waste Disposed of - *kg/FU*	8,20E-04	1,05E-04	2,88E-05	6,84E-06	9,61E-04	-1,60E-04
Non-Hazardous Waste Disposed of - *kg/FU*	4,98E+00	1,06E+00	1,86E-01	4,05E+00	1,03E+01	-6,15E-01
Radioactive waste disposed of - *kg/FU*	8,87E-03	6,08E-06	7,34E-06	2,64E-07	8,89E-03	-7,93E-05
Outgoing flows						
Components for reuse *kg/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling *kg/FU*	2,58E+00	1,08E+00	0,00E+00	1,50E+01	1,87E+01	0,00E+00
Materials for energy recovery *kg/FU*	4,88E-02	1,27E+00	0,00E+00	0,00E+00	1,32E+00	0,00E+00
Electrical power supplied to the outside *MJ/FU*	2,45E-02	2,48E+00	0,00E+00	0,00E+00	2,50E+00	0,00E+00
Steam energy supplied to the outside *MJ/FU*	4,43E-02	4,83E+00	0,00E+00	0,00E+00	4,87E+00	0,00E+00
Gas and process energy supplied externally *MJ/FU*	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Optional indicators						
Particulate matter *Diseases incidences*	3,64E-07	9,27E-08	1,02E-07	9,11E-09	5,68E-07	-2,84E-07
Ionising radiation, human health *kBq U235 eq.*	9,30E-02	9,18E-03	1,04E-02	4,42E-04	1,13E-01	-9,95E-02
Ecotoxicity, freshwater *CTUe*	7,22E+01	8,37E+00	3,08E+01	5,80E-01	1,12E+02	-9,66E+01
Human toxicity, cancer *CTUh*	2,82E-08	5,40E-10	1,63E-09	3,28E-11	3,04E-08	4,37E-09
Human toxicity, non-cancer *CTUh*	1,45E-06	1,37E-08	3,66E-08	4,69E-10	1,50E-06	-4,66E-08
Land use *Pt*	2,35E+02	1,12E+01	5,30E+01	2,62E+00	3,02E+02	-5,59E+01

Table 19[3]: Indicators for A1 set.

REFERENCE ENVIRONMENTAL IMPACT INDICATORS															
Environmental impact	Production	Construction		Use							End of Life				D Benefits and loads beyond system boundaries
	A1 / A2 / A3	A4 Transports	A5 Installation	B1 Use	B2 Maintenance	B3 Reparation	B4 Replacement	B5 Refurbishment	B6 Energy consumption	B7 Water use	C1 Deconstruction / Demolition	C2 Transports	C3 Waste treatment	C4 Disposal	
Depletion of abiotic resources (non-fuels) *kg Sb eq/FU*	3,25E-04	3,13E-05	4,41E-07	0,00E+00	3,45E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,66E-07	0,00E+00	6,24E-07	-3,20E-04
Depletion of abiotic resources (fossil fuels) *kg Sb eq/FU*	2,26E-01	7,39E-03	1,84E-04	0,00E+00	2,84E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,02E-04	0,00E+00	6,71E-04	-2,14E-02
Climate change - total *kg CO_2 eq/FU*	3,84E+01	1,02E+00	4,05E-02	0,00E+00	1,19E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,71E-02	0,00E+00	5,54E-02	-3,33E+00
Ozone depletion *kg of CFC 11 eq/FU*	1,47E-05	1,85E-07	3,70E-09	0,00E+00	7,89E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,12E-09	0,00E+00	1,54E-08	-1,89E-07
Photochemical oxidation *kg of C_2H_4 eq/FU*	1,03E-01	5,46E-04	1,90E-05	0,00E+00	8,69E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,70E-05	0,00E+00	5,34E-05	-2,58E-03
Acidification *kg SO2 eq/FU*	1,99E-01	3,27E-03	1,87E-04	0,00E+00	4,39E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,90E-05	0,00E+00	3,84E-04	-2,11E-02
Eutrophication *kg of PO_4^{3-} eq/FU*	4,89E-03	5,90E-04	7,60E-05	0,00E+00	3,68E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,64E-05	0,00E+00	7,37E-05	-2,90E-03
Human toxicity *kg of 1,4-DB/FU*	1,15E+01	4,11E-01	1,67E-02	0,00E+00	7,90E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,29E-02	0,00E+00	3,29E-02	-6,92E+00
Ecotoxicity, freshwater *kg of 1,4-DB/FU*	7,50E-01	1,12E-02	6,03E-04	0,00E+00	6,04E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,50E-04	0,00E+00	5,56E-04	-3,41E-02
Ecotoxicity, marine *kg of 1,4-DB/FU*	9,27E+02	4,28E+01	1,85E+00	0,00E+00	1,61E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,37E+00	0,00E+00	1,93E+00	-1,20E+02
Ecotoxicity, terrestrial *kg of 1,4-DB/FU*	4,55E-02	1,50E-03	3,63E-04	0,00E+00	2,68E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,14E-05	0,00E+00	8,16E-05	2,13E-02

[3] These results are from the EN 15804+A1:2013 NMD method, using the Ecoinvent 3.6 database with Simapro 9.4.0.2, in order to upload the two sets of data available in the Nationale Milieudatabase.

• Additional information on the release of hazardous substances into indoor air, soil and water during the use phase

1. Indoor air

No indoor air quality tests were carried out.

2. Soil and water

No soil or water contact tests have been carried out.

• Product contribution to indoor wellbeing

1. Product features regarding hygrothermal comfort

Thermal insulation coefficient Ug = 0.7 W/(m²·K) according to ISO 19916-1:2018.

2. Product features regarding acoustics

Acoustic insulation Rw (C; Ctr) = 36 (-2; -3) dB according to ISO 19916-1:2018.

11. Product features regarding visual comfort

Light transmission (EN 410): 79%.

12. Product features regarding odours

No olfactory comfort tests were carried out.

In addition, the product is made of glass, a mineral and inert material. It is not likely to emit odours during use.

Owner of the EPD Responsible for data, LCA and information	AGC 4 Avenue Jean Monnet 1348 Louvain-La-Neuve Belgium	
Program database	Nationale Milieu Database Postbus 1201 2280 CE Rijswijk Netherlands	
Author of LCA and EPD	WeLOOP 254 Rue du Bourg 59130 Lambersart France	
Verification Name of auditor Date of verification	EN 15804+A2 G. F. van der Burgh February 2026	