VITRINTEC®
wall solutions

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Aluminium-glass Vitrintec systems

Environmental Product Declaration

CERTIFICATE N 708/2024

ECO PLATFORM
EPD
VERIFIED

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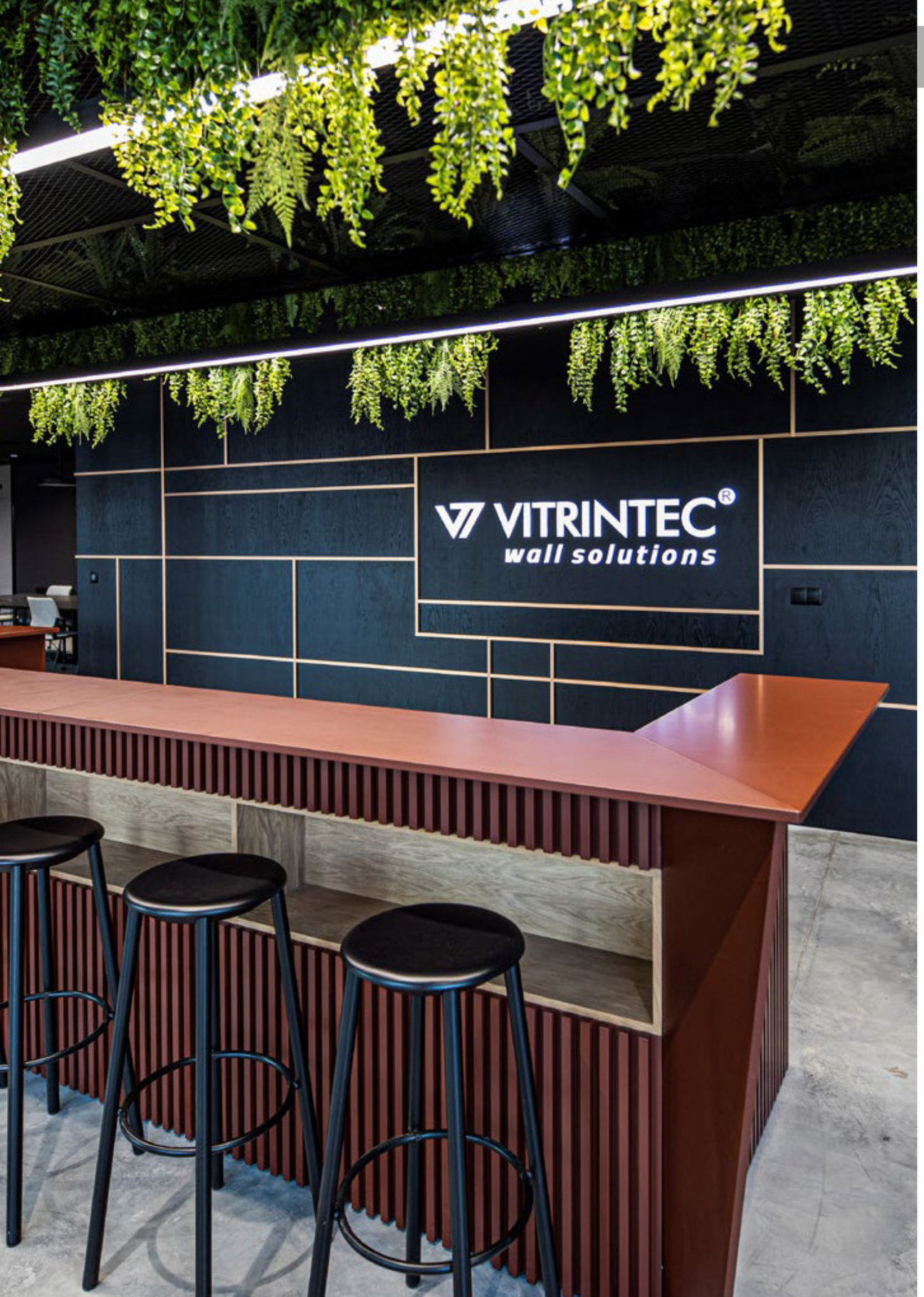

Type III Environmental Product Declaration No. 708/2024

This declaration is the Type III Environmental Product Declaration (EPD) based on EN 15804+A2 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment and their aspects verified by the independent body according to ISO 14025. Basically, comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804+A2.
Life cycle analysis (LCA): A1-A3, C1-C4 and D modules in accordance with EN 15804 (Cradle-to-Gate with options)
The year of preparing the EPD: 2024
The year of validation: 2025 (change of the document's graphic design)
Product standard: EAD 210005-00-0505
Service Life: 75 years
PCR: ITB-PCR A
Functional unit: 1 m2
Reasons for performing LCA: B2B
Representativeness: Poland, European

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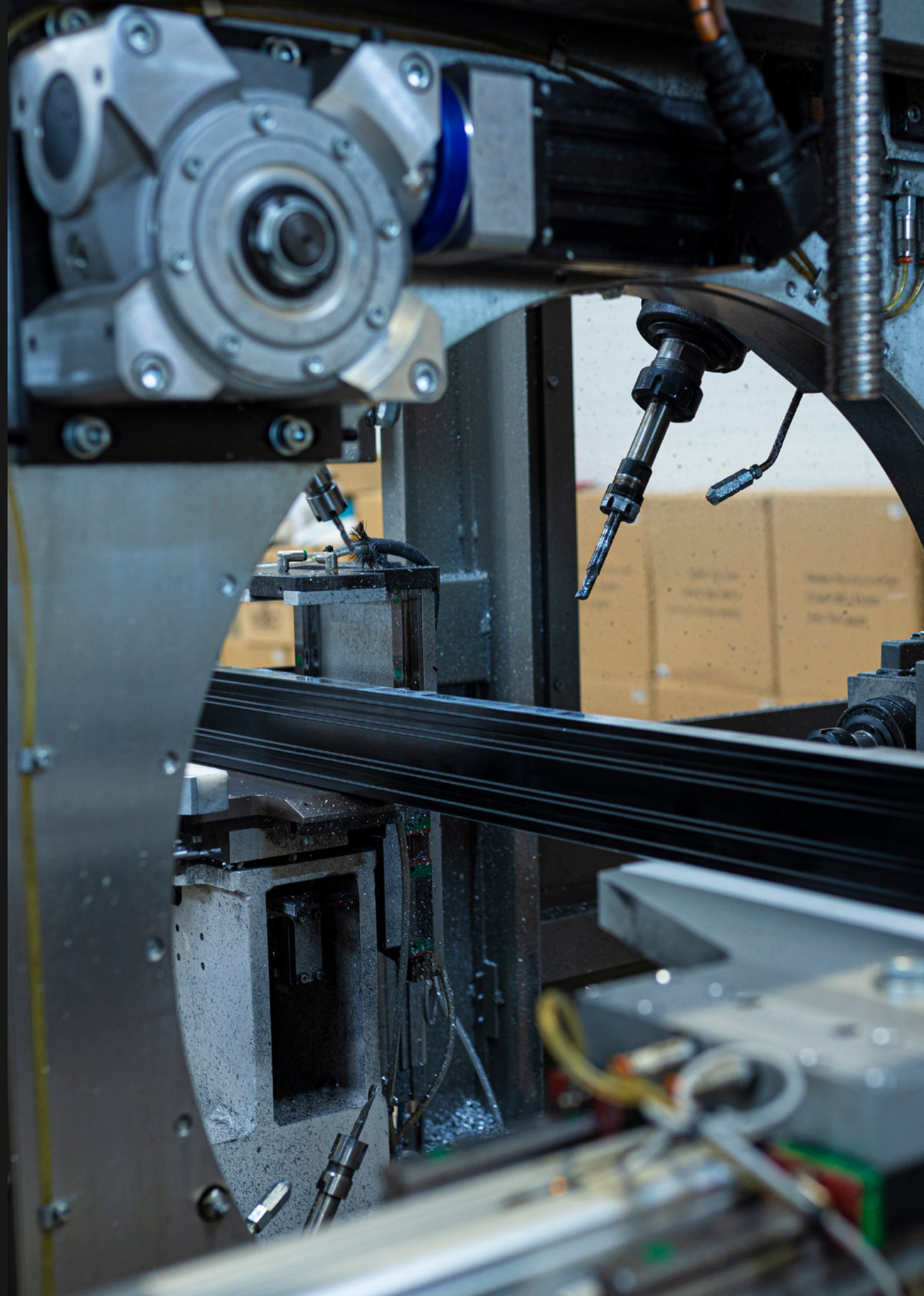
VITRINTEC is a manufacturer of aluminium and glass systems that also specializes in their design and distribution. Vitrintec contains extensive machinery, which includes two production lines for aluminium prefabrication and complex glass processing. Aluminium profiles are prefabricated in energy-efficient CNC-controlled machines. The glass production line is fully automated. The manufacturing plant has an area of 1600 m2.

The proximity of the aluminium and glass production, as well as the profile and accessory warehouses, is a major advantage. This makes it possible to prepare a complex order within one location. The process of assembling system profiles, glass and accessories needed for installation is coordinated entirely in-house.

The company has implemented an Integrated Management System: ISO 14001 and ISO 9001.



PRODUCTS DESCRIP-TION AND APPLICATION

Vitrintec Sp. z o.o. offers a wide range of non-load-bearing partition wall systems with an aluminum-glass structure, enabling functional division of space. The company's products are characterized by the lowest aluminum profiles on the market and the shortest time needed for their prefabrication and assembly.
Glass partition wall systems from Vitrintec Sp. z o.o. are intended for the arrangement of office rooms, public buildings, shopping malls and other places that require the separation of space. They provide an ergonomic division of the interior and compliance with design guidelines.

The Pure system: the company's flagship product, consists of a system of single-glazed walls using glass panes, 10 mm or 12 mm thick. A characteristic feature of the system are small aluminum profiles with a depth of 22 mm and a height of 25 mm or 30 mm, which can be painted in any color from the RAL palette.

The Silence system is a single or double-glazed system that provides a wide range of possibilities for creating bent and broken walls. Its profiles are available in two heights, 25 mm and 30 mm. The depth of the profiles is 78 mm, and the maximum height is 3500 mm. The customer can decide to fill it with laminated or tempered safety glass - 10 mm or 12 mm thick. If the customer cares about high acoustic insulation, they can decide on an acoustic insert, thanks to which they will achieve acoustic insulation at the level of 49 db. The seals in the system remain hidden, creating a minimalist design. Using this solution, you can achieve high acoustic insulation parameters with all-glass walls without mullions. National Technical Assessment: ITB-KOT-2021/181. European Technical Assessment: ETA- 21/0430.

The Ultra Silence system is a double-glazed, mullion-free partition wall system, in which the structural profiles reach a height of 25 or 30 mm and a depth of 100 mm. Its maximum height is 3500 mm, and the seals are hidden. Double glazing with the simultaneous use of an acoustic insert allows you to achieve high RW acoustic insulation, at a level of 52 dB. National Technical Assessment: ITB-KOT-2021/1816. European Technical Assessment: ETA- 21/0430.

The In Silence partition wall system is a double-glazed product dedicated to spaces where acoustic comfort is key. The maximum sound insulation for the product is 53 dB, which is ensured by a system of hidden seals. The system is 125 mm wide, and the profiles in In Silence have a height of 30 mm and a depth of 125 mm. The maximum height of the profiles is 3500 mm. Despite the above features, the system remains aesthetic

Fire protection systems

Pure FS is a guarantee of safety for every usable surface. This fireproof system of single-glazed walls using interconnected glass panes without glazing bars and minimalist system profiles is designed for the arrangement of very light, transparent glass structures, in which the maximum reduction in the amount of aluminum and invisible seals create the impression of 100% transparency. The system has a fire resistance class EI30 / EW30. The maximum height of the system is 3000 mm, the construction profiles have a height of 30 mm and a depth of 40 mm. National Technical Assessment: ITB-KOT-2019/0978.

Silence FS is a double-glazed system, consisting of structural profiles 30 mm high and 78 mm deep, in any color from the RAL palette. Its maximum height is 3200 mm, fire resistance EI30/EW30. Easy to install, modular. Hidden seals. National Technical Assessment: ITB-KOT-2019/0978.

Ultra Silence FS is a double-glazed system. Its structural profiles are 30 mm high and 100 mm deep. The maximum height of the system is 3200 mm, fire resistance - up to EI60/EW60. The system is characterized by an aesthetic and minimalist design, hidden seals. National Technical Assessment: ITB-KOT-2019/0978.

Pure Loft is a single-glazed, glazing system of aluminum and glass. Its structural profiles are 25 or 30 mm high and 22 mm deep. Its maximum height is 3500 mm. The system has hidden seals, to improve aesthetics it creates the possibility of installing decorative glazing bars, both horizontal and vertical. National Technical Assessment: ITB-KOT-2021/1816. European Technical Assessment: ETA- 21/0430.

Silence Loft is a single- or double-glazed aluminum and glass wall system, consisting of aluminum profiles with a height of 25 mm or 30 mm, a depth of 78 mm, which can be painted in any color from the RAL palette. The maximum height of the system is 4036 mm. The system creates the possibility of installing horizontal and vertical structural glazing bars. It is characterized by acoustic insulation up to 48 dB. National Technical Assessment: ITB-KOT-2019/1191. European Technical Assessment: ETA- 20/0885.

Ultra Silence Loft is a double-glazed aluminum-glass wall system with structural glazing bars. Its structural profiles are 25 or 30 mm high and 100 mm deep: they can be painted in any color from the RAL palette. The maximum height of the system is 4036 mm, the seals remain hidden, the system allows for the installation of both horizontal and vertical structural glazing bars. National Technical Assessment: ITB-KOT-2019/1191. European Technical Assessment: ETA- 20/0885.

Silence Loft FS is a double-glazed glazing system. It has structural profiles with a height of 30 mm and a depth of 78 mm. Maximum height: 3100 mm. The frame profiles can be open or closed in this system, and there is a possibility of using surface or hidden hinges. The system makes it possible to place an installation post on the frame profile. Fire resistance EI30/EW30, maximum sound insulation: 46 dB. National Technical Assessment: ITB-KOT-2022/2089.

Technical description of internal doors manufactured by Vitrintec Sp. z o.o.

Internal system doors offered by Vitrintec Sp. z o.o. are an integral element of aluminum-glass systems dedicated to office interiors. The offer includes:

All-glass doors are made of 8 mm or 10 mm thick tempered glass. Available in single or double leaf options. Maximum size of each leaf: 1200 mm x 3000 mm. There is a possibility of installing optional fittings: access control (electric strike, electric lock), surface-mounted door closer, aeration actuators. Surface-mounted hinges. Possibility of installing blinds. Aluminum frame with a depth of 53 mm, 55 mm, 78 mm, 100 mm. Possibility of installing doors in any mounting hole, also in the glass wall system.

STANDARD doors are single or double-leaf doors in an aluminum frame, single or double glazed (with smoke-tightness option). Maximum door leaf height: 3000 mm. Door leaf profile thickness is 40 mm or 78 mm. Declared acoustic insulation 34 ÷ 40 dB. Standard handle in stainless steel finish, door closer in silver anodized finish. Available infills: transparent/frosted/tinted/smoked/LCD foil glass. Decorative glazing bars, glued for single glazing. Structural glazing bars for double glazing. Possibility of using vertical or horizontal glazing bars. Optional fittings: access control (electric strike, electric lock), surface or hidden door closer, aeration actuators. Surface or hidden hinges. Hidden drop seals. Possibility of installing blinds. Possibility of using a door closer and accessories for access control. Aluminum frame with a depth of 53 mm, 55 mm, 78 mm, 100 mm. Possibility of installing the door in any mounting hole, also in the glass wall system.

STANDARD 78 doors are doors in an aluminum frame, double glazed, with two drop seals. Single or double leaf doors. Maximum leaf height: 3000 m. Glass thickness: from 6 ÷ 12 mm. Standard fittings in stainless steel finish, can be painted in any color from the RAL palette. Optional fittings: access control (electric strike, electric lock), surface door closer, aeration actuators. Hidden hinges, hidden drop seals. Possibility of installing blinds. Possibility of using a door closer and accessories for access control. Aluminum frame with a depth of 78 mm, 100 mm. STANDARD 78 doors are flush with the SILENCE system glass walls on both sides. Possibility of installing the door in any mounting hole, also in the glass wall system.

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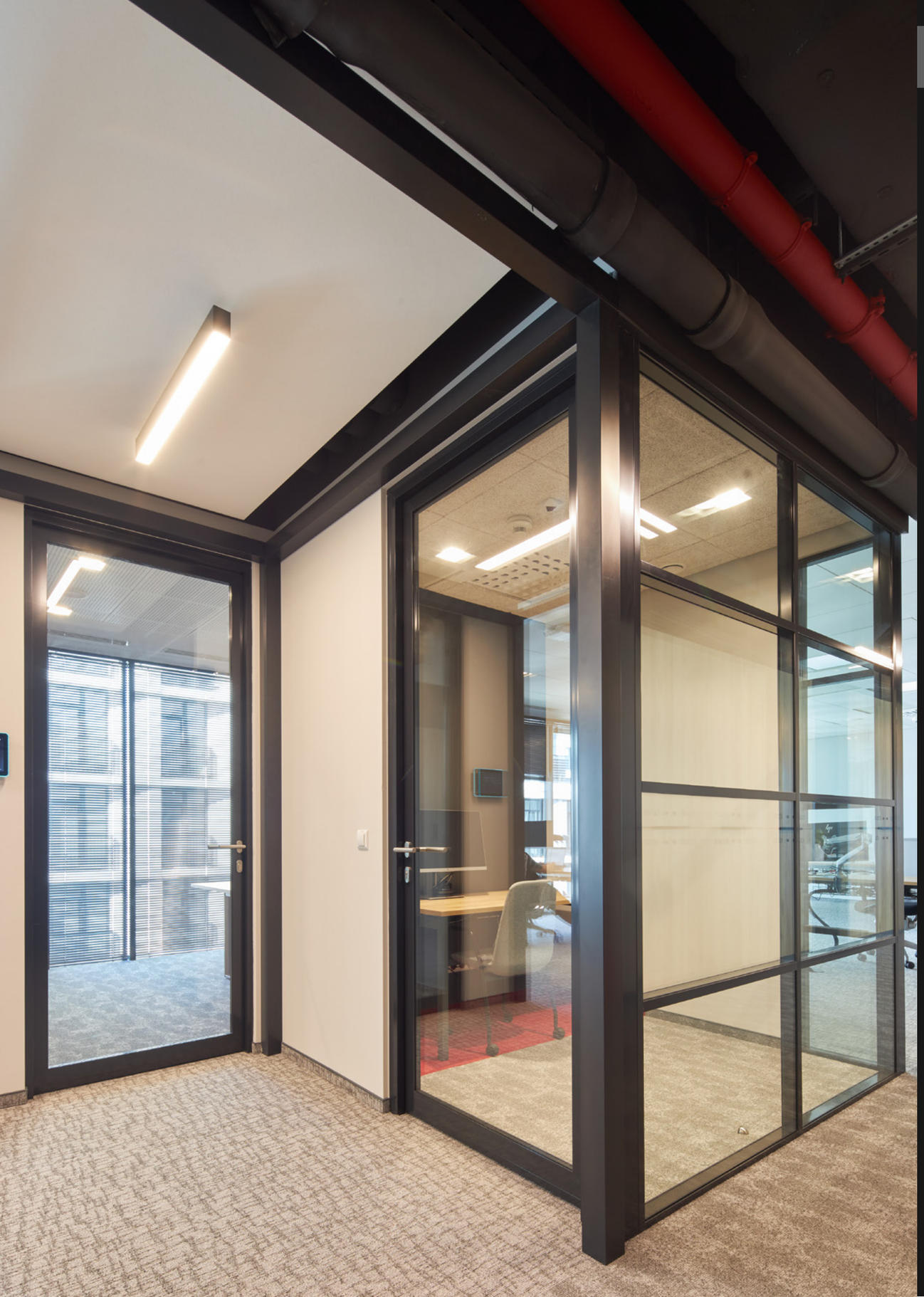
FLUSH DOOR doors are made of tempered or tempered laminated glass, 6 mm or 8 mm thick. The doors are characterized by a hidden frame, to which the glass is glued on both sides. Possibility of using a surface-mounted door closer and equipment for access control. Aluminum frame with a depth of 53 mm, 55 mm, 78 mm, 100 mm. Possibility of installing the door in any mounting hole, also in the glass wall system. The doors are also available in a smoke-proof version. Single or double-leaf doors. Maximum leaf height 3000 mm. Minimum leaf thickness 53 mm. Declared acoustic insulation 36 ÷ 43 dB. Standard handle in stainless steel finish, door closer in silver anodized finish (can be painted in any color from the RAL palette). Optional fittings: access control (electric strike, electric lock), surface-mounted door closer, aeration actuators. Surface-mounted hinges. Hidden drop seals. Possibility of installing blinds.

CLASSIC FS (EI30) Fireproof Doors Classic FS doors are a single- or double-leaf solution. They are filled with AGC Pyrobel 16 (P16), Vetrotech Contraflam 30 or Reglas Pyrobat 15 glazing, and their fire resistance is EI30/EW30. The width of the door leaf in the single-leaf model is up to 1414 mm, in the double-leaf model up to 1114 mm (for one leaf). Possibility of using a surface-mounted door closer and equipment for access control. The width of the system is 78.2 mm. 70 mm deep aluminium frame. Possibility of installing the door in any mounting hole. Choice of glazing: AGC Pyrobel 16 (P16), Vetrotech Contraflam 30 or Reglas Pyrobat 15 (with fire resistance EI30/EW30). Available optional fittings: access control (electric strike, electric lock), surface-mounted door closer, single- and three-point locks, aeration actuators. Surface-mounted hinges.

Full doors available as single or double leaf doors. Full door leaf laminated, veneered or painted. Maximum leaf height: 3000 mm. Declared acoustic insulation: 32 ÷ 40 dB. Door leaf thickness: 40 mm. Aluminum frame with a depth of 53 mm, 55 mm, 78 mm, 100 mm. Possibility of installing the door in any mounting hole, also in a glass wall system. Standard handle in stainless steel finish, door closer in silver anode finish (can be painted in any color from the RAL palette). Surface-mounted or hidden hinges. Hidden drop seals. Optional fittings: access control (electric strike, electric lock), surface-mounted or hidden door closer, aeration actuators.

Detailed parameters of aluminum-glass Vitrintec systems are specified in their catalogues and product cads, which can be downloaded from the Vitrintec Sp. z o.o. website: www.vitrintec.pl



LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Declared unit
The declaration refers to declared unit (DU) – 1 m2 of averaged aluminium-glass Vitrintec systems manufactured by VITRINTEC Sp. z o. o.

Allocation
The allocation rules used for this EPD are based on general ITB PCR A v. 1.6. Production of aluminium-glass Vitrintec systems is two lines process conducted in the manufacturing plan located in Kielce (Poland). All impacts from raw materials extraction and processing are allocated in A1 module of EPD. Impacts from the Vitrintec production were inventoried on the annual production volume expressed in mass units. The allocation was made on average weight of products. Water and energy consumption, associated emissions and generated wastes are allocated to module A3. Energy supply was inventoried for whole production process. Packaging materials were taken into consideration. The obtained results are representative average for all aluminium-glass systems manufactured in the inventory year at the Kielce manufacturing plant.

System boundary and limits
The life cycle analysis (LCA) of the declared products covers: product stage – modules A1-A3, end of life – modules C1-C4 and benefits and loads beyond the system boundary – module D (cradle-to-gate with options) in accordance with EN 15804 + A2 and ITB PCR A v. 1.6. Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculations. It can be assumed that the total sum of omitted processes does not exceed 5% of all impact categories. In accordance with EN 15804 + A2, machines and facilities (capital goods) required for the production as well as transportation of employees were not included in LCA.

Modules A1 and A2: Raw materials supply and transport
Raw materials such as aluminium, float glass, tempered glass, bent glass, seals or paints are produced in Poland and others European plants whereas other ancillary items come from both local and foreign suppliers. Data on transport of the different products to the manufacturing plants is collected and modelled for factory by assessor. Means of transport include small truck (< 10 t e.g. couriers) and lorries (> 16 t) are applied. Based on data provided by the manufacturer, all input of transport resources was inventoried in details. European standards for average combustion were used for calculations.

Module A3: Production
Production contains two lines for aluminium prefabrication and complex glass processing. Aluminium profiles are prefabricated in energy-efficient CNC-controlled machines. The glass production line is fully automated. Electricity supplied is from grid electricity and about 10% from photovoltaic panels. A scheme of aluminium-glass Vitrintec systems production process is presented in Fig. 3.

Paint shop

START OF THE PROCESS → ARRANGING THE MATERIAL FOR

HANGING

WASHER 1

WASHER 2

SPRAY BOTH

BAKE- PREHEATING

WRAPPING AND QUALITY CONTROL

or

SEALING

SAW

DEPARTURE OF THE PRODUCT TO THE CONSTRUCTION SITE

Processing of glass

START OF THE PROCESS → COLLECTING RAW MATERIAL FROM THE WAREHOUSE

RAW MATERIAL 1: WHOLE PANE OF GLASS

RAW MATERIAL 2: WASTE

GLASS CUTTING STATION 1

GLASS CUTTING STATION 2

GLASS PROCESSING ROCK 1

GLASS PROCESSING ROCK 2

GLASS PROCESSING BUSETTI

GLASS PROCESSING GRINDER

DEPARTURE OF THE PRODUCT TO THE CONSTRUCTION SITE

Processing of aluminum profiles

or

VARIANT 1→ further processing in the same section

VARIANT 2→ transport to an alternative location for further processing

SAW

THE MENAGERS DECISION DEPENDS ON WHICH POSITION THE PROFILE FITS DEPENDING ON TECHNOLOGY

CNC STATION 1

CNC STATION 2

CNC STATION 3

ASSEMBLY STATION 1

ASSEMBLY STATION 2

ASSEMBLY STATION 3

DEPARTURE OF THE PRODUCT TO THE CONSTRUCTION SITE OR TO THE CUSTOMER

Laser processing or bending machine

Transfer of processed glass to assembly stations

START OF THE PROCESS: SELECTION OF RAW MATERIAL FROM THE WAREHOUSE

LASER PROCESSING OF BENDING MACHINE

Replenishing material needs/assortiment for individual sockets

Modules C1-C4 and D: End-of-life (EoL)

It is assumed that at the end-of-life, 100% of aluminium-glass Vitrintec systems are demounted using electric tools (module C1) and it is transported to waste processing plant distant by 60 km, on 16-32 t lorry (Euro 6) (module C2). Materials recovered from dismantled products are prepared to recycling (module C3) and landfilling (module C4) according to a realistic treatment practice for industrial waste what is presented in Table 1.

It is assumed that 95 % of aluminium undergo recycling after sorting and cutting while the remaining 5 % is forwarded to landfill as mixed construction and demolition wastes. In the case of glass, 30 % is energy/material recovery, while 70 % goes to landfill. A potential credit resulting from the recycling of aluminium scrap and glass are presented in module D. Utilization of packaging material was not taken into consideration.

Table 1. End-of-life scenario for aluminium-glass Vitrintec systems manufactured by VITRINTEC Sp. z o. o.

Material	Waste processing (energy/material recovery)	Landfilling
aluminium	95%	5%
glass	30%	70%

Data quality

The data selected for LCA analysis originates from ITB-LCI questionnaires completed by VITRINTEC Sp. z o. o. using the inventory data, ITB and Ecoinvent database v. 3.10 and KOBiZE. KOBiZE data is supplemented with Ecoinvent v. 3.10 data on the national electricity mix impact where no specific indicator data is provided. Data for some raw materials can come from available supplier EPDs. No specific data collected is older than five years and no generic datasets used are older than ten years. The representativeness, completeness, reliability and consistency are judged as sufficient for calculations.

Data collection period

The data for manufacture of the declared products refers to period between 01.01.2023 – 31.12.2023 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

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Assumptions and estimates

Impacts were inventoried and obtained results are calculated as a representative average for all aluminium-glass systems manufactured in the inventory year at the Kielce manufacturing plant. According to the data adopted for the Ecoinvent v 3.10 and available EPDs database, post-consumer is not burdened with the environmental impacts, however, aluminium scrap processing impacts were included. The results for 1 m2 of averaged aluminium-glass Vitrintec systems are presented in Tables 3-6. Calculation rules

LCA was performed using ITB-LCA tool and own algorithms for impact calculations developed in accordance with EN 15804 + A2 and ITB PCR A v. 1.6 document. Calculations are presented for averaged mass of 38.6 kg based on data obtained from the LCI inventory and Vitrintec Sp. z o. o. data.

Databases

The data for the processes comes from Ecoinvent v. 3.10 and ITB-Database. Specific data quality analysis was a part of external audit. Polish electricity mix used (production) is 0.685 kg CO2/kWh (KOBiZE 2023).

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 m2 of averaged aluminium-glass Vitrintec systems manufactured by Vitrintec Sp. z o. o.

Table 2. System boundaries for the environmental characteristic of aluminium-glass Vitrintec systems.

Environmental assessment information (MD – Module Declared, MND – Module Not Declared, INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MD	MD	MD	MD	MD

Table 3. LCA results for aluminium-glass Vitrintec systems – environmental impacts (DU: 1 m2)

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	q. kg CO_2	1.30E+02	1.08E+00	8.33E+00	1.39E+02	1.75E-01	4.41E-01	5.84E-01	2.17E-01	-6.35E+00
Greenhouse gas potential - fossil	q. kg CO_2	1.32E+02	1.08E+00	8.29E+00	1.42E+02	1.72E-01	4.40E-01	2.57E-01	2.15E-01	-6.29E+00
Greenhouse gas potential - biogenic	q. kg CO_2	-2.11E+00	7.08E-04	4.29E-02	-2.07E+00	3.10E-03	2.90E-04	3.27E-01	1.85E-03	-6.08E-02
Global warming potential - land use and land use change	q. kg CO_2	9.23E-01	3.59E-04	2.16E-03	9.26E-01	4.04E-05	1.46E-04	3.39E-04	1.74E-04	-4.12E-03
Stratospheric ozone depletion potential	q. kg CF	8.05E-06	2.15E-08	4.13E-07	8.48E-06	3.02E-09	8.76E-09	1.85E-08	5.47E-08	-2.03E-07
Soil and water acidification potent	q. mol H	9.70E-01	2.25E-03	6.12E-02	1.03E+00	1.67E-03	9.17E-04	1.81E-03	1.89E-03	-4.24E-02
Eutrophication potential - freshwater	q. kg P	5.34E-02	7.32E-05	9.96E-03	6.34E-02	2.86E-04	2.98E-05	1.21E-04	1.86E-05	-1.84E-03
Eutrophication potential - seawate	q. kg N	1.20E-01	5.40E-04	9.45E-03	1.30E-01	2.38E-04	2.20E-04	6.25E-04	7.13E-04	-5.71E-03
Eutrophication potential - terrestrial	eq. mol N	1.26E+00	5.83E-03	7.76E-02	1.34E+00	2.04E-03	2.38E-03	4.93E-03	7.79E-03	-1.06E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	4.37E-01	3.74E-03	2.29E-02	4.64E-01	5.71E-04	1.52E-03	1.45E-03	2.28E-03	-1.68E-02
Potential for depletion of abiotic resources - non--fossil resour	eq. kg Sb	7.58E-04	3.60E-06	1.47E-05	7.77E-04	2.27E-07	1.46E-06	9.34E-06	5.78E-07	-2.04E-04
Abiotic depletion potential - fossil fuels	MJ	1.44E+03	1.52E+01	1.30E+02	1.59E+03	2.57E+00	6.19E+00	2.81E+00	4.67E+00	-4.78E+01
Water deprivation potential	eq. m^3	1.46E+02	7.44E-02	2.07E+00	1.48E+02	5.23E-02	3.03E-02	5.69E-02	2.00E-02	-4.34E+00

Table 4. LCA results for aluminium-glass Vitrintec systems – additional impacts indicators (DU: 1 m2)

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Particulate matter	disease incidence	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA	INA	INA	INA	INA	INA	INA

Table 5. LCA results for aluminium-glass Vitrintec systems – waste categories (DU: 1 m2)

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste neutralized	kg	1.17E+01	2.21E-02	7.49E-03	1.18E+01	5.32E-07	9.04E-03	2.29E-02	7.23E-03	-4.55E-01
Non-hazardous waste neutralised	kg	2.97E+01	4.69E-01	7.57E-01	3.10E+01	1.52E-02	1.91E-01	1.73E+00	9.55E-02	-1.28E+01
Radioactive waste	kg	1.57E-02	4.94E-06	8.44E-05	1.58E-02	2.21E-06	2.00E-06	1.14E-05	2.45E-05	-1.30E-04
Components for re-use	kg	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	3.39E+00	1.16E-04	5.98E-03	3.39E+00	1.56E-05	4.71E-05	1.29E+01	2.06E-03	-1.13E+01
Materials for energy recovery	kg	1.94E-03	9.58E-07	5.58E-04	2.50E-03	2.19E-08	3.99E-07	3.69E-07	2.88E-07	-1.11E-05
Energy exported	MJ	2.54E+00	6.96E-03	2.83E-01	2.83E+00	7.46E-03	2.61E-03	8.89E-02	1.11E-02	-6.59E-01

Table 6. LCA results for aluminium-glass Vitrintec systems - the resource use (DU: 1 m²)

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	2.87E+02	2.62E-01	9.69E+00	2.97E+02	1.87E-01	1.06E-01	3.44E-01	5.17E-02	-3.17E+00
Consumption of renewable primary energy resources used as raw materials	MJ	2.58E+01	0.00E+00	0.00E+00	2.58E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	3.13E+02	2.62E-01	9.69E+00	3.23E+02	1.87E-01	1.06E-01	3.44E-01	5.17E-02	-7.06E+00
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.39E+03	1.52E+01	1.39E+02	1.55E+03	2.72E+00	6.19E+00	2.81E+00	4.67E+00	-2.99E+01
Consumption of non-renewable primary energy resources used as raw materials	MJ	5.37E+01	0.00E+00	2.25E-01	5.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of non-renewable primary energy resources	MJ	1.45E+03	1.52E+01	1.39E+02	1.60E+03	2.72E+00	6.19E+00	2.81E+00	4.67E+00	-4.79E+01
Consumption of secondary materials	kg	2.72E+00	7.05E-03	1.19E-02	2.74E+00	2.08E-04	2.87E-03	4.06E-03	1.67E-03	-3.63E-02
Consumption of renewable secondary fuels	MJ	4.34E-01	8.86E-05	1.02E-04	4.34E-01	1.14E-06	3.63E-05	3.23E-04	2.61E-05	-3.09E-03
Consumption of non-renewable secondary fuels	MJ	1.79E-01	0.00E+00	0.00E+00	1.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net consumption of freshwater resources	m³	1.77E+00	2.05E-03	4.92E-03	1.78E+00	8.37E-04	8.33E-04	1.76E-03	4.47E-03	-1.17E-01

Verification

The process of verification of this EPD is in accordance with ISO 14025 and ISO 21930. After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years, if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804 + A2 and ITB PCR A
Independent verification corresponding to ISO 14025 (subclause 8.1.3) ☒ external ☐ internal
External verification of EPD: Halina Prejzner, PhD Eng LCA, LCI audit and input data verification: Mateusz Kozicki, PhD Verification of LCA: Michał Piasecki, PhD. DSc. Eng

Note 1: The declaration owner has the sole ownership, liability and responsibility for the information provided and contained in EPD. Declarations within the same product category but from different programs may not be comparable. Declarations of construction products may not be comparable if they do not comply with EN 15804 + A2. For further information about comparability, see EN 15804 + A2 and ISO 14025. Depending on the application, a corresponding conversion factor such as the specific weight per surface area must be taken into consideration.

Note 2: ITB is a public Research Organization and Notified Body (EC Reg. no 1488) to the European Commission and to other Member States of the European Union designated for the tasks concerning the assessment of building products' performance. ITB acts as the independent, third-party verification organization (17065/17025 certified). ITB-EPD program is recognized and registered member of The European Platform – Association of EPD program operators and ITB-EPD declarations are registered and stored in the international ECO-PORTAL.

Normative references

- ITB PCR A v. 1.6 General Product Category Rules for Construction Products
- EAD 210005-00-0505 Internal partition kits for use as non-loadbearing walls
- ISO 14025:2006. Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets – Service life planning – Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets – Service life planning – Part 8: Reference service life and service-life estimation
- EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
- EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- KOBiZE Emissions (CO2, SO2, NOx, CO and total dust) from electricity, 2023

LCA, LCI audit and input data verification
Mateusz Kozicki, PhD

qualified electronic signature

Head of the Thermal Physic, Acoustics and Environment Department
Agnieszka Winkler-Skalna, PhD

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CERTIFICATE № 708/2024
of TYPE III ENVIRONMENTAL DECLARATION

Products:

Aluminium-glass Vitrintec systems

Manufacturer:

Vitrintec Sp. z o.o.

Karola Olszewskiego 23, 25-663 Kielce, Poland

confirms the correctness of the data included in the development of
Type III Environmental Declaration and accordance with the requirements of the standard

EN 15804+A2

Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.

This certificate, issued on 19th December 2024 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics and Environment Department
Agnieszka Winkler-Skalna, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, December 2024