Type III Environmental Product Declaration No. 837/2025

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Interior steel doors

Owner of the EPD:

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Basic information

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, A4-A5, C1-C4 and D modules in accordance with EN 15804+A2 (Cradle-to-Gate with options)
The year of preparing the EPD: 2025
Product standards: PN-EN 14351-2
Service Life: 25 years
PCR: ITB-PCR A
Declared unit: 1 steel interior door
Reasons for performing LCA: B2B
Representativeness: Poland, Europe, 2023

MANUFACTURER

Porta KMI Poland S.A. is a Polish manufacturer of doors for external and internal use. The company was founded in 1992 and currently employs approximately 1,800 people.

Manufacturing plant located in Bolszewo

Manufacturing plant located in Suwałki

Manufacturing plant located in Ełk 1

Manufacturing plant located in Ełk 2

Manufacturing plant located in Romania

Porta KMI Poland S.A. operates in Bolszewo, Ełk, Suwałki and Arad (Romania), producing over 85,000 exterior, entrance, interior and technical doors per month. As part of its newly adopted business strategy, the company operates in accordance with the principles of open business, cooperation and development.

The Porta KMI Poland plants include:

- the plant in Bolszewo (PKP) – the largest production plant, where wooden interior and technical doors are manufactured,
- two plants in Ełk – production of steel doors (PKM) and wooden doors and wooden door frames (PKS),
- plant in Suwałki (PKD) – production of wooden door leaves and door frames,
- plant in Romania (PKR) – production of wooden interior doors and carpentry and joinery products.

PRODUCTS DESCRIPTION

Interior doors manufactured by Porta KMI Poland S.A. are designed for use in private and commercial premises. The company's products include steel interior doors, technical doors with fire and smoke resistance parameters for various applications, and internal entrance doors with burglary resistance classes, among other features. Depending on the customer's needs, the doors can be manufactured from a wide range of materials and fulfil various functions. The vast majority of wood-based materials used are FSC certified. Porta KMI Poland interior doors can be used in residential buildings, office buildings, hospitals and public buildings, among others. The doors are offered in terms of their functional properties, making them suitable for a wide range of applications.

Table 1 Characteristic of the steel interior doors manufactured by PORTA KMI POLAND S.A.

Type	Product designation	Size [mm] w: width, h: height t: thickness	Construction	Finish	Technical properties
Interior steel, full doors	DZ-S-S, DZ-S-S-RC3, DWL-S, DS/P-PP30, DS/P-PP60, DTS-PP30, DTS-PP60, DWS-S-S-PP30	w: 60-100 h: max. 2200 t: 40-67	steel doors with insulation core inside	polyester paint, inox and galvanized steel sheet	PN-EN 14351-2
Interior steel, glazed doors	DS/O-PP30, DS/O-PP60, DTS-PP30, DTS-PP60	w: 60-100 h: max. 2200 t: 40-67	steel doors with glazing and with insulation core	polyester paint, inox and galvanized steel sheet	

All additional technical information about the product is available on the manufacturer's website and catalogues.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Unit

The declared unit is 1 steel interior door manufactured by Porta KMI Poland S.A.

System boundary

The life cycle analysis of the declared products covers “Product Stage” A1-A3, A4-A5 and “End of Life” C1-C4+D modules in accordance with EN 15804 and ITB PCR A (cradle to gate with options). Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculation. 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.

Allocation

The allocation rules used for this EPD are based on general ITB ’s document PCR A. In the modules A1-A3, material losses in the assembly of the products in the factory are defined on the averaged specific values for the site. Input and output data from the production is inventoried and allocated to the production on the mass basis The declaration covers a wide range of products (averaged). Their production resources and processing stages are basically similar, depending on dimensions.

System limits

99.0% materials and 100% energy consumption were inventoried in a factory and were included in calculation. In the assessment, all significant parameters from gathered production data are considered, utilized energy, and electric power consumption, direct production waste, and available emission measurements. The total of neglected input flows per module A1-A3 does not exceed the permitted maximum of 1 % of energy usage and product mass. Tires consumption for transport was not taken into account. The components like: foils, papers, labels, tapes with a percentage share of less than 0.1% were not included in the calculations. It is assumed that the total sum of omitted processes does not exceed 1% of all impact categories. In accordance with EN 15804 machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

Modules A1 and A2: *Raw materials supply and transport*

Raw materials such as metal, glass, polymeric products (PE, PET, PP, PVC, ABS, EPDM, PS), paints, lacquers, mineral wool, additives and packaging materials come from Polish and foreign

suppliers. Data on transport of the different products to the manufacturing plants were collected and modelled for the factories by assessor. Means of transport include trucks. For calculation purposes Polish and European fuel averages are applied.

Module A3: *Production*

Production of the interior steel doors begins with the selection and quality control of raw materials. Subsequently, individual door elements undergo formatting, cutting, gluing and applying finishes like veneers or varnishing. In the next step a product goes to the production line where is drilled and milled. Then the door is supplemented with appropriate elements such as locks or hinges, followed by subjection to gentle surface cleaning and packaging. The last stage is packing and delivery to the warehouse. The production of interior steel doors is executed analogously, except the finishing stage in which the steel elements are welded in the continuous production.

Figure 1 Manufacturing process scheme

Module A4-A5: *Transport to consumer and installation*

Transport of the steel structure from the Factory to the construction site is carried out using specialized vehicles. Vehicle transport at distance 500 km is considered (emission standard: Euro 5) with 100% load capacity. It was assumed that 5 kWh of energy per unit is required to install the product.

Modules *C and D: End-of-life (EOL)*

It is assumed that at the end of life the exterior doors are dismantled manually. Selectively recovered materials undergo recycling, energy recovery or landfilling according to Polish treatment practice of industrial waste while residual materials are forwarded to landfill in the form of mixed construction and demolition wastes (Table 2). In the adapted end-of-life scenario, the de-constructed products are transported to a recycling/sortation plant distant by 50km on > 16t lorry EURO 5The reuse, energy recovery and recycling stage is considered beyond the system boundaries (D).

Table 2 End-of-life scenario for the specific products

Material	Material recovery	Energy recovery	Recycling	Landfilling
steel	95%	0%	100%	0%
wood-based products	95%	50%	50%	0%
polymers	80%	30%	30%	40%
glass	90%	0%	100%	0%
mineral wool	95%	0%	0%	100%

Electricity at end-of-life (module C) has been modelled using an average Polish electricity mix as the location where the product reaches end-of-life is unknown.

Data collection period

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

Data quality

The data selected for LCA originate from ITB-LCI questionnaires completed by PORTA KMI POLAND S.A. and verified during data audit. No data collected is older than five years and no generic datasets used are older than ten years. The representativeness, completeness, reliability, and consistency is judged as good. The background data for the processes come from the following resources database Ecoinvent v.3.11 and specific suppliers (EPDs). Specific (LCI) data quality analysis was a part of the input data verification.

Assumptions and estimates

The impacts of the representative products were aggregated using weighted average.

Calculation rules

LCA was performed using ITB-LCA tool developed in accordance with EN15804+A2. Emission of greenhouse gases was calculated using the IPCC GWP method with a 100-year horizon and all other with the EF 3.1. method. No mass balance approach was used. The biogenic content in product less than 5%.

Additional information

Polish electricity (Ecoinvent v 3.11 supplemented by actual national KOBiZE data) emission factor used is 0.597 kg CO_2/kWh (National for 2023). As a general rule, no particular environmental or health protection measures other than those specified by law are necessary.

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 steel interior door with frame produced in Poland. The following life cycle modules (Table 2) were included in the analysis. The following tables 3-18 show the environmental impacts of the life cycle of selected modules (A1-A5+C1-C4+D).

Table 3 System boundaries for the environmental characteristic of the product.

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	MD	MD	MND	MND	MND	MND	MND	MND	MND	MD	MD	MD	MD	MD

Table 4 Life cycle assessment (LCA) results for interior steel full door with frame – environmental impacts of (DU: 1 door (29 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	7.94E+01	5.08E+00	4.04E+01	1.25E+02	4.84E-01	3.43E+00	3.39E+00	1.94E-01	1.38E+01	4.25E+00	-4.25E+01
Greenhouse potential - fossil	eq. kg CO_2	7.56E+01	5.08E+00	4.04E+01	1.21E+02	9.24E-01	3.43E+00	3.38E+00	1.93E-01	1.32E+01	4.25E+00	-4.22E+01
Greenhouse potential - biogenic	eq. kg CO_2	-5.36E-01	3.25E-03	5.11E-02	-4.81E-01	3.16E-03	9.23E-03	9.12E-03	6.59E-04	5.36E-01	8.85E-04	-3.04E-01
Global warming potential - land use and land use change	eq. kg CO_2	7.24E-01	1.69E-03	3.93E-03	7.30E-01	3.62E-04	5.36E-04	5.29E-04	7.57E-05	4.45E-04	6.71E-04	-1.73E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1.56E-06	1.11E-07	3.24E-07	2.00E-06	2.14E-07	1.88E-08	1.86E-08	4.46E-08	1.15E+01	5.19E+01	-7.10E-07
Soil and water acidification potential	eq. mol H+	5.83E-01	1.63E-02	4.04E-01	1.00E+00	3.75E-03	3.62E-02	3.58E-02	7.83E-04	2.51E-01	3.54E-02	-1.34E-01
Eutrophication potential - freshwater	eq. kg P	7.06E-02	3.47E-04	6.22E-02	1.33E-01	6.21E-05	5.90E-03	5.83E-03	1.30E-05	6.59E-05	2.88E-05	-2.12E-02
Eutrophication potential - seawater	eq. kg N	7.92E-02	5.49E-03	5.31E-02	1.38E-01	1.13E-03	5.13E-03	5.07E-03	2.36E-04	1.54E-01	1.20E-01	-3.11E-02
Eutrophication potential - terrestrial	eq. mol N	8.04E-01	5.97E-02	4.52E-01	1.32E+00	1.23E-02	4.47E-02	4.42E-02	2.58E-03	1.44E+00	2.28E-01	-3.31E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	3.06E-01	2.47E-02	1.39E-01	4.70E-01	3.78E-03	1.29E-02	1.27E-02	7.89E-04	3.55E-01	4.97E-02	-1.06E-01
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	3.37E-03	1.75E-05	1.60E-05	3.40E-03	3.27E-06	1.29E-06	1.27E-06	6.84E-07	4.51E-06	9.62E-07	-2.26E-04
Abiotic depletion potential - fossil fuels	MJ	9.27E+02	7.20E+01	6.93E+02	1.69E+03	1.37E+01	5.41E+01	5.34E+01	2.86E+00	2.91E+00	4.03E+00	-3.98E+02
Water deprivation potential	eq. m^3	3.04E+01	3.77E-01	1.38E+01	4.46E+01	6.34E-02	1.03E+00	1.02E+00	1.32E-02	3.34E-01	9.46E-02	-1.01E+01

Table 5 Life cycle assessment (LCA) results for interior steel full door with frame – additional impacts indicators (DU: 1 door (29 kg) with frame)

Indicator	Unit	A1-A3	A4-A5	C1-C4	D
Particulate matter	disease incidence	INA	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA	INA

Table 6 Life cycle assessment (LCA) results for interior steel full door with frame - the resource use (DU: 1 door (29 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	8.55E+01	1.17E+00	4.96E+01	1.36E+02	1.97E-01	4.45E+00	4.39E+00	4.11E-02	7.48E-01	7.40E-02	-4.20E+01
Consumption of renewable primary energy resources used as raw materials	MJ	1.35E+01	0.00E+00	0.00E+00	1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	9.93E+01	1.17E+00	4.96E+01	1.50E+02	1.97E-01	4.45E+00	4.39E+00	4.11E-02	7.48E-01	7.40E-02	-4.20E+01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	9.18E+02	7.20E+01	6.52E+02	1.64E+03	1.37E+01	5.41E+01	5.34E+01	2.86E+00	-3.60E+02	-1.96E+02	-5.67E+02
Consumption of non-renewable primary energy resources used as raw materials	MJ	5.90E+01	0.00E+00	4.09E+01	9.99E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.63E+02	2.00E+02	-1.61E+02
Total consumption of non-renewable primary energy resources	MJ	9.79E+02	7.20E+01	6.93E+02	1.74E+03	1.37E+01	5.41E+01	5.34E+01	2.86E+00	2.91E+00	4.04E+00	-4.05E+02
Consumption of secondary materials	kg	8.96E+00	3.22E-02	5.32E-02	9.05E+00	4.60E-03	4.70E-03	4.64E-03	9.59E-04	1.12E-02	1.82E-03	-8.76E+00
Consumption of renew. secondary fuels	MJ	9.23E-03	4.22E-04	2.05E-04	9.86E-03	5.06E-05	2.37E-05	2.34E-05	1.06E-05	1.46E-04	2.48E-05	-3.61E-03
Consumption of non-renewable secondary fuels	MJ	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	-1.59E-04
Net consumption of freshwater	m^3	8.10E-01	8.71E-03	3.23E-01	1.14E+00	1.72E-03	1.55E-01	1.53E-01	3.60E-04	4.51E-03	3.57E-03	-2.14E-01

Table 7 Life cycle assessment (LCA) results for interior steel full door with frame – waste categories (DU: 1 door (29 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2.20E+01	1.03E-01	6.07E+00	2.82E+01	1.54E-02	4.19E-01	4.14E-01	3.21E-03	4.14E-02	2.89E-07	-1.36E+01
Non-hazardous waste	kg	3.14E+02	2.21E+00	3.03E+02	6.19E+02	2.73E-01	2.82E+01	2.79E+01	5.70E-02	7.83E-01	7.57E-01	-1.18E+02
Radioactive waste	kg	1.27E-03	2.12E-05	6.60E-05	1.36E-03	1.02E-06	8.12E-06	8.02E-06	2.14E-07	1.84E-05	2.15E-05	-2.32E-04
Components for re-use	kg	0.00E+00	0.00E+00	1.63E-01	1.63E-01	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	1.68E-01	8.62E-04	2.62E-02	1.95E-01	4.24E-05	3.63E-04	3.59E-04	8.86E-06	3.94E+00	2.69E-05	-3.81E-03
Materials for energy recovery	kg	1.96E-04	4.57E-06	5.46E-06	2.06E-04	3.43E-07	5.83E-07	5.76E-07	7.17E-08	1.17E-06	3.36E-07	-1.31E-06
Exported Energy	MJ	2.50E+00	3.15E-02	1.92E-01	2.72E+00	0.00E+00	1.73E-01	1.71E-01	0.00E+00	5.70E+00	4.11E+00	-1.09E-01

Table 8 Life cycle assessment (LCA) results for interior steel door with glazing and frame – environmental impacts of (DU: 1 door (34 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	8.46E+01	5.35E+00	4.73E+01	1.37E+02	5.67E-01	3.43E+00	3.77E+00	2.27E-01	1.61E+01	4.99E+00	-4.98E+01
Greenhouse potential - fossil	eq. kg CO_2	8.08E+01	5.34E+00	4.73E+01	1.33E+02	1.08E+00	3.43E+00	3.76E+00	2.26E-01	1.55E+01	4.98E+00	-4.95E+01
Greenhouse potential - biogenic	eq. kg CO_2	-5.03E-01	3.41E-03	5.99E-02	-4.40E-01	3.70E-03	9.23E-03	1.01E-02	7.73E-04	6.28E-01	1.04E-03	-3.57E-01
Global warming potential - land use and land use change	eq. kg CO_2	7.26E-01	1.77E-03	4.60E-03	7.33E-01	4.25E-04	5.36E-04	5.88E-04	8.87E-05	5.22E-04	7.87E-04	-2.03E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1.68E-06	1.16E-07	3.79E-07	2.17E-06	2.51E-07	1.88E-08	2.07E-08	5.23E-08	1.35E+01	6.09E+01	-8.32E-07
Soil and water acidification potential	eq. mol H+	6.36E-01	1.71E-02	4.73E-01	1.13E+00	4.39E-03	3.62E-02	3.98E-02	9.18E-04	2.94E-01	4.15E-02	-1.57E-01
Eutrophication potential - freshwater	eq. kg P	7.14E-02	3.65E-04	7.29E-02	1.45E-01	7.28E-05	5.90E-03	6.48E-03	1.52E-05	7.73E-05	3.37E-05	-2.48E-02
Eutrophication potential - seawater	eq. kg N	8.77E-02	5.77E-03	6.23E-02	1.56E-01	1.33E-03	5.13E-03	5.63E-03	2.77E-04	1.80E-01	1.41E-01	-3.65E-02
Eutrophication potential - terrestrial	eq. mol N	9.07E-01	6.28E-02	5.30E-01	1.50E+00	1.45E-02	4.47E-02	4.91E-02	3.02E-03	1.69E+00	2.67E-01	-3.88E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	3.34E-01	2.60E-02	1.63E-01	5.23E-01	4.43E-03	1.29E-02	1.41E-02	9.25E-04	4.16E-01	5.82E-02	-1.24E-01
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	3.43E-03	1.84E-05	1.87E-05	3.47E-03	3.84E-06	1.29E-06	1.42E-06	8.01E-07	5.29E-06	1.13E-06	-2.65E-04
Abiotic depletion potential - fossil fuels	MJ	9.87E+02	7.58E+01	8.13E+02	1.88E+03	1.61E+01	5.41E+01	5.94E+01	3.36E+00	3.41E+00	4.73E+00	-4.66E+02
Water deprivation potential	eq. m^3	3.56E+01	3.97E-01	1.62E+01	5.22E+01	7.43E-02	1.03E+00	1.13E+00	1.55E-02	3.91E-01	1.11E-01	-1.18E+01

Table 9 Life cycle assessment (LCA) results for interior steel full door with glazing and frame – additional impacts indicators (DU: 1 door (34 kg) with frame)

Indicator	Unit	A1-A3	A4-A5	C1-C4	D
Particulate matter	disease incidence	INA	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA	INA

Table 10 Life cycle assessment (LCA) results for interior steel full door with glazing and frame - the resource use (DU: 1 door (34 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	8.94E+01	1.23E+00	5.81E+01	1.49E+02	2.31E-01	4.45E+00	4.88E+00	4.81E-02	8.76E-01	8.67E-02	-4.93E+01
Consumption of renewable primary energy resources used as raw materials	MJ	1.35E+01	0.00E+00	0.00E+00	1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	1.03E+02	1.23E+00	5.81E+01	1.63E+02	2.31E-01	4.45E+00	4.88E+00	4.81E-02	8.76E-01	8.67E-02	-4.93E+01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	9.77E+02	7.58E+01	7.65E+02	1.82E+03	1.61E+01	5.41E+01	5.94E+01	3.36E+00	-4.22E+02	-2.30E+02	-6.64E+02
Consumption of non-renewable primary energy resources used as raw materials	MJ	5.90E+01	0.00E+00	4.80E+01	1.07E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E+02	2.35E+02	-1.89E+02
Total consumption of non-renewable primary energy resources	MJ	1.04E+03	7.58E+01	8.13E+02	1.93E+03	1.61E+01	5.41E+01	5.94E+01	3.36E+00	3.41E+00	4.73E+00	-4.75E+02
Consumption of secondary materials	kg	8.98E+00	3.38E-02	6.24E-02	9.07E+00	5.39E-03	4.70E-03	5.16E-03	1.12E-03	1.32E-02	2.14E-03	-1.03E+01
Consumption of renew. secondary fuels	MJ	1.23E-02	4.44E-04	2.40E-04	1.30E-02	5.94E-05	2.37E-05	2.60E-05	1.24E-05	1.71E-04	2.90E-05	-4.23E-03
Consumption of non-renewable secondary fuels	MJ	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	-1.87E-04
Net consumption of freshwater	m^3	8.43E-01	9.16E-03	3.79E-01	1.23E+00	2.02E-03	1.55E-01	1.70E-01	4.22E-04	5.29E-03	4.18E-03	-2.51E-01

Table 11 Life cycle assessment (LCA) results for interior steel full door with glazing and frame – waste categories (DU: 1 door (34 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2.21E+01	1.09E-01	7.11E+00	2.94E+01	1.80E-02	4.19E-01	4.60E-01	3.77E-03	4.85E-02	3.39E-07	-1.59E+01
Non-hazardous waste	kg	3.21E+02	2.33E+00	3.55E+02	6.78E+02	3.20E-01	2.82E+01	3.10E+01	6.69E-02	9.18E-01	8.88E-01	-1.38E+02
Radioactive waste	kg	1.34E-03	2.23E-05	7.74E-05	1.44E-03	1.20E-06	8.12E-06	8.91E-06	2.50E-07	2.16E-05	2.52E-05	-2.72E-04
Components for re-use	kg	0.00E+00	0.00E+00	1.92E-01	1.92E-01	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	1.70E-01	9.06E-04	3.07E-02	2.02E-01	4.98E-05	3.63E-04	3.98E-04	1.04E-05	4.62E+00	3.16E-05	-4.46E-03
Materials for energy recovery	kg	2.02E-04	4.81E-06	6.40E-06	2.14E-04	4.02E-07	5.83E-07	6.40E-07	8.40E-08	1.37E-06	3.94E-07	-1.53E-06
Exported Energy	MJ	2.97E+00	3.31E-02	2.25E-01	3.23E+00	0.00E+00	1.73E-01	1.90E-01	0.00E+00	6.69E+00	4.82E+00	-1.28E-01

Table 12 Life cycle assessment (LCA) results for interior technical steel full door with frame – environmental impacts of (DU: 1 door (52 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	1.18E+02	7.73E+00	7.24E+01	1.98E+02	8.68E-01	3.43E+00	4.19E+00	3.47E-01	2.47E+01	7.63E+00	-7.62E+01
Greenhouse potential - fossil	eq. kg CO_2	1.14E+02	7.72E+00	7.24E+01	1.94E+02	1.66E+00	3.43E+00	4.18E+00	3.46E-01	2.37E+01	7.62E+00	-7.57E+01
Greenhouse potential - biogenic	eq. kg CO_2	-1.23E-01	4.94E-03	9.16E-02	-2.60E-02	5.66E-03	9.23E-03	1.13E-02	1.18E-03	9.60E-01	1.59E-03	-5.46E-01
Global warming potential - land use and land use change	eq. kg CO_2	7.59E-01	2.56E-03	7.04E-03	7.69E-01	6.50E-04	5.36E-04	6.53E-04	1.36E-04	7.98E-04	1.20E-03	-3.11E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	2.95E-06	1.68E-07	5.80E-07	3.70E-06	3.83E-07	1.88E-08	2.30E-08	8.00E-08	2.07E+01	9.31E+01	-1.27E-06
Soil and water acidification potential	eq. mol H+	8.32E-01	2.48E-02	7.24E-01	1.58E+00	6.72E-03	3.62E-02	4.42E-02	1.40E-03	4.49E-01	6.35E-02	-2.40E-01
Eutrophication potential - freshwater	eq. kg P	7.88E-02	5.27E-04	1.12E-01	1.91E-01	1.11E-04	5.90E-03	7.20E-03	2.32E-05	1.18E-04	5.16E-05	-3.80E-02
Eutrophication potential - seawater	eq. kg N	1.11E-01	8.35E-03	9.53E-02	2.15E-01	2.03E-03	5.13E-03	6.26E-03	4.24E-04	2.76E-01	2.16E-01	-5.58E-02
Eutrophication potential - terrestrial	eq. mol N	1.19E+00	9.08E-02	8.11E-01	2.09E+00	2.21E-02	4.47E-02	5.46E-02	4.62E-03	2.59E+00	4.08E-01	-5.93E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	5.01E-01	3.76E-02	2.49E-01	7.87E-01	6.78E-03	1.29E-02	1.57E-02	1.42E-03	6.37E-01	8.90E-02	-1.90E-01
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	4.86E-03	2.66E-05	2.87E-05	4.91E-03	5.87E-06	1.29E-06	1.57E-06	1.23E-06	8.09E-06	1.73E-06	-4.05E-04
Abiotic depletion potential - fossil fuels	MJ	1.59E+03	1.10E+02	1.24E+03	2.95E+03	2.46E+01	5.41E+01	6.59E+01	5.13E+00	5.22E+00	7.23E+00	-7.13E+02
Water deprivation potential	eq. m^3	5.45E+01	5.74E-01	2.47E+01	7.98E+01	1.14E-01	1.03E+00	1.26E+00	2.37E-02	5.98E-01	1.70E-01	-1.80E+01

Table 13 Life cycle assessment (LCA) results for interior technical steel full door with frame – additional impacts indicators (DU: 1 door (52 kg) with frame)

Indicator	Unit	A1-A3	A4-A5	C1-C4	D
Particulate matter	disease incidence	INA	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA	INA

Table 14 Life cycle assessment (LCA) results for interior technical steel full door with frame - the resource use (DU: 1 door (52 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.17E+02	1.78E+00	8.89E+01	2.07E+02	3.53E-01	4.45E+00	5.42E+00	7.36E-02	1.34E+00	1.33E-01	-7.54E+01
Consumption of renewable primary energy resources used as raw materials	MJ	1.49E+01	0.00E+00	0.00E+00	1.49E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	1.32E+02	1.78E+00	8.89E+01	2.23E+02	3.53E-01	4.45E+00	5.42E+00	7.36E-02	1.34E+00	1.33E-01	-7.54E+01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.37E+03	1.10E+02	1.17E+03	2.65E+03	2.46E+01	5.41E+01	6.59E+01	5.13E+00	-6.45E+02	-3.52E+02	-1.02E+03
Consumption of non-renewable primary energy resources used as raw materials	MJ	2.67E+02	0.00E+00	7.34E+01	3.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.50E+02	3.59E+02	-2.89E+02
Total consumption of non-renewable primary energy resources	MJ	1.65E+03	1.10E+02	1.24E+03	3.00E+03	2.46E+01	5.41E+01	6.59E+01	5.13E+00	5.22E+00	7.24E+00	-7.27E+02
Consumption of secondary materials	kg	9.98E+00	4.89E-02	9.55E-02	1.01E+01	8.24E-03	4.70E-03	5.73E-03	1.72E-03	2.02E-02	3.27E-03	-1.57E+01
Consumption of renew. secondary fuels	MJ	2.14E-02	6.42E-04	3.67E-04	2.24E-02	9.08E-05	2.37E-05	2.89E-05	1.90E-05	2.62E-04	4.44E-05	-6.47E-03
Consumption of non-renewable secondary fuels	MJ	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	-2.86E-04
Net consumption of freshwater	m^3	1.33E+00	1.32E-02	5.79E-01	1.92E+00	3.09E-03	1.55E-01	1.89E-01	6.46E-04	8.09E-03	6.40E-03	-3.84E-01

Table 15 Life cycle assessment (LCA) results for interior technical steel full door with frame – waste categories (DU: 1 door (52 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2.44E+01	1.57E-01	1.09E+01	3.54E+01	2.76E-02	4.19E-01	5.11E-01	5.76E-03	7.42E-02	5.19E-07	-2.43E+01
Non-hazardous waste	kg	3.55E+02	3.37E+00	5.43E+02	9.02E+02	4.90E-01	2.82E+01	3.44E+01	1.02E-01	1.40E+00	1.36E+00	-2.11E+02
Radioactive waste	kg	2.08E-03	3.22E-05	1.18E-04	2.24E-03	1.83E-06	8.12E-06	9.90E-06	3.83E-07	3.30E-05	3.86E-05	-4.17E-04
Components for re-use	kg	0.00E+00	0.00E+00	2.93E-01	2.93E-01	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	2.28E-01	1.31E-03	4.70E-02	2.77E-01	7.61E-05	3.63E-04	4.43E-04	1.59E-05	7.06E+00	4.83E-05	-6.83E-03
Materials for energy recovery	kg	2.13E-04	6.95E-06	9.78E-06	2.30E-04	6.15E-07	5.83E-07	7.11E-07	1.28E-07	2.10E-06	6.02E-07	-2.34E-06
Exported Energy	MJ	3.94E+00	4.79E-02	3.43E-01	4.33E+00	0.00E+00	1.73E-01	2.11E-01	0.00E+00	1.02E+01	7.37E+00	-1.96E-01

Table 16 Life cycle assessment (LCA) results for interior technical steel door with glazing and frame – environmental impacts of (DU: 1 door (57 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	1.23E+02	7.99E+00	7.93E+01	2.10E+02	1.33E+00	3.43E+00	4.59E+00	3.80E-01	2.71E+01	8.36E+00	-8.36E+01
Greenhouse potential - fossil	eq. kg CO_2	1.19E+02	7.98E+00	7.93E+01	2.06E+02	2.53E+00	3.43E+00	4.58E+00	3.79E-01	2.60E+01	8.36E+00	-8.29E+01
Greenhouse potential - biogenic	eq. kg CO_2	-9.00E-02	5.10E-03	1.00E-01	1.55E-02	8.66E-03	9.23E-03	1.23E-02	1.30E-03	1.05E+00	1.74E-03	-5.98E-01
Global warming potential - land use and land use change	eq. kg CO_2	7.61E-01	2.65E-03	7.72E-03	7.71E-01	9.94E-04	5.36E-04	7.16E-04	1.49E-04	8.74E-04	1.32E-03	-3.41E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	3.06E-06	1.74E-07	6.36E-07	3.87E-06	5.86E-07	1.88E-08	2.52E-08	8.77E-08	2.27E+01	1.02E+02	-1.40E-06
Soil and water acidification potential	eq. mol H+	8.85E-01	2.56E-02	7.93E-01	1.70E+00	1.03E-02	3.62E-02	4.84E-02	1.54E-03	4.92E-01	6.96E-02	-2.63E-01
Eutrophication potential - freshwater	eq. kg P	7.96E-02	5.45E-04	1.22E-01	2.02E-01	1.70E-04	5.90E-03	7.89E-03	2.55E-05	1.30E-04	5.65E-05	-4.17E-02
Eutrophication potential - seawater	eq. kg N	1.20E-01	8.63E-03	1.04E-01	2.33E-01	3.10E-03	5.13E-03	6.86E-03	4.64E-04	3.02E-01	2.37E-01	-6.12E-02
Eutrophication potential - terrestrial	eq. mol N	1.29E+00	9.39E-02	8.89E-01	2.27E+00	3.38E-02	4.47E-02	5.98E-02	5.07E-03	2.83E+00	4.48E-01	-6.51E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	5.29E-01	3.89E-02	2.73E-01	8.41E-01	1.04E-02	1.29E-02	1.72E-02	1.55E-03	6.98E-01	9.76E-02	-2.08E-01
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	4.92E-03	2.75E-05	3.14E-05	4.97E-03	8.98E-06	1.29E-06	1.73E-06	1.34E-06	8.86E-06	1.89E-06	-4.43E-04
Abiotic depletion potential - fossil fuels	MJ	1.65E+03	1.13E+02	1.36E+03	3.13E+03	3.76E+01	5.41E+01	7.23E+01	5.62E+00	5.72E+00	7.92E+00	-7.82E+02
Water deprivation potential	eq. m^3	5.98E+01	5.93E-01	2.71E+01	8.75E+01	1.74E-01	1.03E+00	1.38E+00	2.60E-02	6.56E-01	1.86E-01	-1.98E+01

Table 17 Life cycle assessment (LCA) results for interior technical steel full door with glazing and frame – additional impacts indicators (DU: 1 door (57 kg) with frame)

Indicator	Unit	A1-A3	A4-A5	C1-C4	D
Particulate matter	disease incidence	INA	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA	INA

Table 18 Life cycle assessment (LCA) results for interior technical steel full door with glazing and frame - the resource use (DU: 1 door (57 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.21E+02	1.84E+00	9.74E+01	2.20E+02	5.39E-01	4.45E+00	5.94E+00	8.07E-02	1.47E+00	1.45E-01	-8.26E+01
Consumption of renewable primary energy resources used as raw materials	MJ	1.49E+01	0.00E+00	0.00E+00	1.49E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	1.36E+02	1.84E+00	9.74E+01	2.36E+02	5.39E-01	4.45E+00	5.94E+00	8.07E-02	1.47E+00	1.45E-01	-8.26E+01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.43E+03	1.13E+02	1.28E+03	2.83E+03	3.76E+01	5.41E+01	7.23E+01	5.63E+00	-7.07E+02	-3.85E+02	-1.11E+03
Consumption of non-renewable primary energy resources used as raw materials	MJ	2.67E+02	0.00E+00	8.04E+01	3.47E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.13E+02	3.93E+02	-3.17E+02
Total consumption of non-renewable primary energy resources	MJ	1.71E+03	1.13E+02	1.36E+03	3.18E+03	3.76E+01	5.41E+01	7.23E+01	5.63E+00	5.72E+00	7.93E+00	-7.96E+02
Consumption of secondary materials	kg	1.00E+01	5.06E-02	1.05E-01	1.02E+01	1.26E-02	4.70E-03	6.28E-03	1.89E-03	2.21E-02	3.58E-03	-1.72E+01
Consumption of renew. secondary fuels	MJ	2.44E-02	6.64E-04	4.02E-04	2.55E-02	1.39E-04	2.37E-05	3.17E-05	2.08E-05	2.87E-04	4.87E-05	-7.09E-03
Consumption of non-renewable secondary fuels	MJ	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	-3.13E-04
Net consumption of freshwater	m^3	1.36E+00	1.37E-02	6.35E-01	2.01E+00	4.73E-03	1.55E-01	2.08E-01	7.08E-04	8.87E-03	7.01E-03	-4.21E-01

Table 19 Life cycle assessment (LCA) results for interior technical steel full door with glazing and frame – waste categories (DU: 1 door (57 kg) with frame)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2.45E+01	1.62E-01	1.19E+01	3.66E+01	4.22E-02	4.19E-01	5.60E-01	6.31E-03	8.13E-02	5.69E-07	2.67E+01
Non-hazardous waste	kg	3.61E+02	3.48E+00	5.95E+02	9.60E+02	7.49E-01	2.82E+01	3.77E+01	1.12E-01	1.54E+00	1.49E+00	2.31E+02
Radioactive waste	kg	2.15E-03	3.33E-05	1.30E-04	2.32E-03	2.81E-06	8.12E-06	1.08E-05	4.20E-07	3.62E-05	4.23E-05	4.57E-04
Components for re-use	kg	0.00E+00	0.00E+00	3.21E-01	3.21E-01	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	2.30E-01	1.35E-03	5.15E-02	2.83E-01	1.16E-04	3.63E-04	4.85E-04	1.74E-05	7.74E+00	5.29E-05	7.48E-03
Materials for energy recovery	kg	2.19E-04	7.19E-06	1.07E-05	2.37E-04	9.41E-07	5.83E-07	7.80E-07	1.41E-07	2.30E-06	6.60E-07	2.57E-06
Exported Energy	MJ	4.41E+00	4.95E-02	3.77E-01	4.83E+00	0.00E+00	1.73E-01	2.31E-01	0.00E+00	1.12E+01	8.08E+00	2.14E-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 and ITB PCR A
Independent verification corresponding to ISO 14025 (sub clause 8.1.3.) [x] external [ ] internal
External verification of EPD: Halina Prejzner, PhD. Eng. LCI audit and verification: Michał Chwedaczuk, M.Sc. Eng. LCA, LCI audit and input data verification: Michał Piasecki, PhD., D.Sc., eng.

Note 1: The declaration owner has the sole ownership, liability, and responsibility for the information provided and contained in EPD. 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.

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 (see ISO 17025/17065/17029). 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 General Product Category Rules for Construction Products (v.1.6.,2023)
- ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- 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
- PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- ISO 20915:2018 Life cycle inventory calculation methodology for steel products
- KOBiZE Wskaźniki emisyjności CO_2, SO_2, NO_x, CO i pyłu całkowitego dla energii elektrycznej. December 2023
- World Steel Association 2023 Life Cycle inventory methodology report for steel products
- https://ecoinvent.org/

LCA, LCI audit and input data verification
Michał Piasecki, PhD. D.Sc. C.E. Eng.

Head of Thermal Physic, Acoustic and Environment Department
Agnieszka Winkler-Skalna, PhD. C.E. Eng.

Instytut Techniki Budowlanej

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02-656 Warsaw, Ksawerów 21

CERTIFICATE № 837/2025
of TYPE III ENVIRONMENTAL DECLARATION

Products:

Steel interior doors

Manufacturer:

PORTA KMI POLAND S.A.

Szkolna 54, 84-239 Bolszewo, 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 7th November 2025 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, November 2025