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## EXTERIOR DOORS



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### Owner of the EPD:

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### Basic information

This declaration is the type III Environmental Product Declaration (EPD) based on EN 15804 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. Their aspects were verified by the independent body according to ISO 14025. Basically, a comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804.

**Life cycle analysis (LCA):** A1-A3, C3, C4 and D modules in accordance with EN 15804 (Cradle to Gate with options)

**The year of preparing the EPD:** 2020

**Product standard:** PN-EN 14351

**Service Life:** 20 years

**PCR:** ITB-PCR A (PCR based on EN 15804)

**Declared unit:** 1 exterior door with frame

**Reasons for performing LCA:** B2B

**Representativeness:** Polish product

## MANUFACTURER



Fig. 1. A view of the Porta KMI Poland Sp. z o.o. Sp. k. production hall in Bolszewo

**Porta KMI Poland Sp. z o. o. Sp. k.** is a Polish door manufacturer. The company was established in 1992 and currently employs approx. 1800 people. Porta KMI Poland Sp. z o. o. Sp. k. operates in production plants located in Bolszewo, Ełk, Suwałki and Arad (Romania). It produces over 85,000 internal, entrance, external and technical doors by month. As part of the new business strategy adopted, the company operates in accordance with the idea of open business, cooperation and development.

Porta facilities include:

- factory in Bolszewo (PKP) – the largest plant manufacturing interior, technical and exterior door leaves,
- 2 factories in Ełk City – production of wooden (PKS) and metal (PKM) door leaves and frames,
- factory in Suwałki (PKD) – production of wooden doors and frames,
- factory in Romania – production of carpentry and joinery products.

## PRODUCT DESCRIPTION

Exterior doors manufactured by Porta KMI Poland Sp. z o. o. Sp. k. are dedicated for communication in domestic as well as commercial premises. Among company's products, wooden and steel doors are distinguished. Depending on the customer's needs, doors possess various functionalities and can be produced from a wide range of materials. Most of wood-based materials used possess FSC certificates.

Table 1. Characteristic of the exterior doors manufactured by Porta KMI Poland Sp. z o.o. Sp. k.

Type	Product designation	Size [mm] w: width, h: height t: thickness	Construction	Finish	Technical properties
Steel full doors	Steel SAFE RC2; Steel SAFE RC2 z Thermo; Steel SAFE RC3; Steel SAFE RC3 z Thermo; Steel ENERGY PROTECT RC3; Steel ARCTIC PASSIVE RC3; Metal Basic Plus	w: 80-100 h: max. 2158 t: 54, 66	steel doors with core (mineral wool or styrofoam)	laminate, PVC or polyester paint	PN-EN 14351-1
Steel glazed doors	Steel SAFE; Steel SAFE z Thermo; Steel ENERGY PROTECT; Steel ARCTIC PASSIVE	w: 80-100 h: max. 2158 t: 54, 66	steel doors with glazing and with core (mineral wool or styrofoam)	laminate or polyester paint	

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Wooden full doors	Eco POLAR; Eco POLAR PASSIVE	w: 80-100 h: max. 2307 t: 68, 79	wooden doors with core (mineral wool or styrofoam)	outdoor water varnish	
Wooden glazed doors	Eco POLAR; Eco POLAR PASSIVE	w: 80-100 h: max. 2307 t: 68, 79	wooden doors with glazing and with core (mineral wool or styrofoam)	outdoor water varnish	

### APPLICATION

Porta brand products can be used in residential buildings, office buildings, hospitals or public buildings as external partitions separating building interiors from the environment. Exterior doors offered are differentiated in terms of their functional properties in order to make them suitable for required weather conditions.





Fig. 2. Examples of exterior doors manufactured by Porta KMI Poland Sp. z o. o. Sp. k.

### LIFE CYCLE ASSESSMENT (LCA) – general rules applied

#### Allocation

The allocation rules used for this EPD are based on general ITB PCR A. Production of the exterior doors (including door frames) is a line process in three factories of Porta KMI Poland Sp. z o.o. Sp. k. in Bolszewo, Elk and Suwałki (Poland). Allocation was done on product mass basis. All impacts from raw materials extraction are allocated in A1 module of the LCA. 100% of impacts from line production of Porta Sp. z o.o. Sp. k. were inventoried and 22.24% were allocated to the exterior doors production (including door frames). Utilization of packaging material was taken into consideration. Module A2 includes transport of raw materials such as steel, aluminium, wood-based products, glass, polymeric products, paints, mineral wool and additives from their suppliers to Porta KMI Poland Sp. z o.o. Sp. k. production plants in Bolszewo, Elk and Suwałki (Poland). Municipal wastes of the factories were allocated to module A3. Energy supply was inventoried for all factories and 22.24 % was allocated to the exterior doors production (including door frames). Emissions in the factories are measured and were allocated to module A3.

#### System limits

The life cycle analysis of the declared products covers “Product Stage”, A1-A3, C3, C4 and D modules (Cradle to Gate with options) in accordance with EN 15804:2012+A2:2019 and ITB PCR A. The details of systems limits are provided in product technical report. All materials and energy consumption inventoried in factories and were included in calculation. In the assessment, all significant parameters from gathered production data are considered, i.e. all material used per formulation, utilized thermal energy, internal fuel and electric power consumption, direct production waste, and all available emission measurements. It can be assumed that the total sum of omitted processes does not exceed 5% of all impact categories. In accordance with EN 15804:2012+A2:2019, machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

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

Raw materials such as steel, aluminium, wood-based products, 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.

**A3: Production**

Production of the exterior 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.

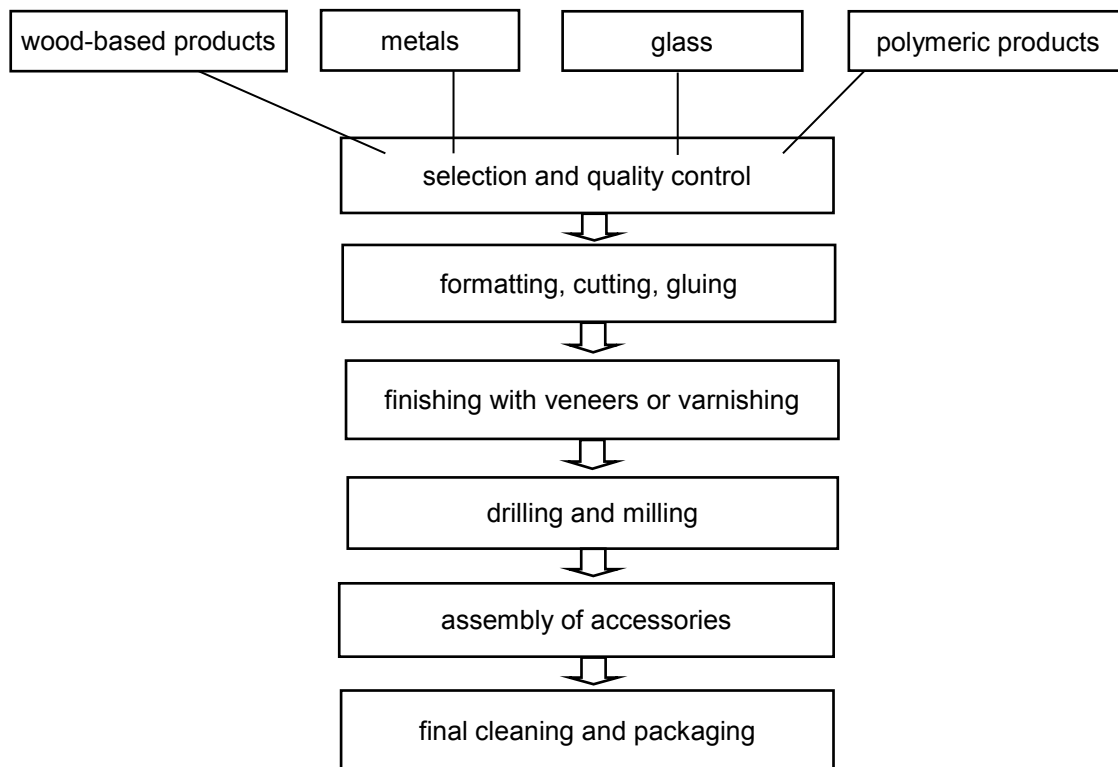


Fig. 3. A scheme of manufacturing of the exterior doors by Porta KMI Poland Sp. z o.o. Sp.k.

**End of life scenarios**

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). The reuse, energy recovery and recycling stage is considered beyond the system boundaries (D).

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Table 2. End of life scenario for the exterior doors manufactured by Porta KMI Poland Sp. z o.o. Sp. k.

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%

### Data collection period

The data for manufacture of the declared products refer to period between 01.01.2018 – 31.12.2018 (1 year). The life cycle assessments were prepared for Poland as reference area.

### Data quality

The values determined to calculate the LCA originate from verified Porta KMI Poland Sp. z o.o. Sp. k. inventory data

### Assumptions and estimates

The impacts of the representative the exterior doors (including door frames) were aggregated using weighted average. Impacts were inventoried and calculated for all products of the exterior doors (including door frames).

### Calculation rules

LCA was done in accordance with ITB PCR A document.

### Databases

The data for the processes come from the following databases: Ecoinvent v.3.6, specific EPDs, ELCD, ÖKOBAUDAT, Ullmann's, ITB-Data. Specific data quality analysis was a part of external ISO 14001 audit.

## LIFE CYCLE ASSESSMENT (LCA) – Results

### Declared unit

The declaration refers to declared unit (DU) – 1 exterior door with frame manufactured by Porta KMI Poland Sp. z o.o. Sp.k.

Table 3. System boundaries for the environmental characteristic of the exterior doors manufactured by Porta KMI Poland Sp. z o.o. Sp. k.

Environmental assessment information (MNA – Module not assessed, MD – Module 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	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MND	MND	MD	MD	MD

## Exterior wooden full door with frame

Environmental impacts: (DU) 1 door (37 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Global warming potential	kg CO <sub>2</sub> eq.	-5.98E+00	1.84E+00	9.38E+00	5.24E+00	1.70E+00	8.82E+00	-3.32E+01
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	2.33E-06	0.00E+00	0.00E+00	2.33E-06	1.28E-07	3.25E-08	-1.07E-07
Acidification potential of soil and water	kg SO <sub>2</sub> eq.	2.63E-01	1.35E-02	2.62E-03	2.80E-01	7.06E-03	1.54E-02	-7.86E-02
Formation potential of tropospheric ozone	kg Ethene eq.	1.49E-01	9.75E-04	5.34E-03	1.55E-01	9.77E-04	1.86E-03	-5.50E-02
Eutrophication potential	kg (PO <sub>4</sub> ) <sup>3-</sup> eq.	5.24E-02	2.38E-03	4.28E-04	5.52E-02	2.80E-03	4.37E-03	-1.62E-02
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.69E-03	0.00E+00	3.47E-05	1.73E-03	2.06E-05	6.97E-06	-8.35E-04
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	8.63E+02	1.99E+01	5.16E+01	9.35E+02	2.55E+01	6.62E+01	-6.10E+02
Environmental aspects on resource use: (DU) 1 door (37 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9.74E+02	1.39E+00	1.26E-02	9.75E+02	1.22E+02	4.50E+00	-1.83E+02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9.42E+02	2.09E+01	5.42E+01	1.02E+03	2.20E+01	6.62E+01	-1.16E+02
Use of secondary material	kg	8.27E+00	0.00E+00	0.00E+00	8.27E+00	0.00E+00	0.00E+00	6,74E+00
Use of renewable secondary fuels	MJ	4.14E-01	0.00E+00	0.00E+00	4.14E-01	0.00E+00	0.00E+00	2.41E+02
Use of non-renewable secondary fuels	MJ	2.18E-01	1.05E+00	0.00E+00	1.26E+00	0.00E+00	0.00E+00	2.50E+01
Net use of fresh water	m <sup>3</sup>	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 door (37 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Hazardous waste disposed	kg	3.63E-02	4.96E-05	9.61E-04	3.73E-02	3.99E-05	8.73E-06	-2.65E-03
Non-hazardous waste disposed	kg	5.01E+00	4.60E-02	9.66E-01	6.02E+00	6.93E-01	4.46E+01	-1.32E+00
Radioactive waste disposed	kg	9.53E-03	0.00E+00	0.00E+00	9.53E-03	1.26E-04	4.35E-04	-5.83E-03
Components for re-use	kg	1.51E-01	0.00E+00	8.46E+00	8.61E+00	9.07E-02	0.00E+00	0.00E+00
Materials for recycling	kg	1.47E-01	0.00E+00	3.20E+00	3.35E+00	2.37E+01	0.00E+00	0.00E+00
Materials for energy recover	kg	6.56E-03	0.00E+00	0.00E+00	6.56E-03	9.32E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	4.09E-01	0.00E+00	0.00E+00	4.09E-01	0.00E+00	8.17E-02	0.00E+00



## Exterior wooden door with glazing and frame

Environmental impacts: (DU) 1 door (57 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Global warming potential	kg CO <sub>2</sub> eq.	2.54E+01	1.85E+00	1.27E+01	3.99E+01	2.27E+00	9.67E+00	-3.36E+01
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	2.70E-06	0.00E+00	0.00E+00	2.70E-06	1.32E-07	3.71E-08	-1.65E-07
Acidification potential of soil and water	kg SO <sub>2</sub> eq.	4.21E-01	1.37E-02	3.55E-03	4.38E-01	8.66E-03	1.75E-02	-6.51E-02
Formation potential of tropospheric ozone	kg Ethene eq.	1.28E-01	9.45E-04	7.23E-03	1.36E-01	1.10E-03	2.14E-03	-4.37E-02
Eutrophication potential	kg (PO <sub>4</sub> ) <sup>3-</sup> eq.	6.71E-02	2.43E-03	5.80E-04	7.01E-02	2.96E-03	4.66E-01	-1.43E-02
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.31E-03	0.00E+00	4.71E-05	1.36E-03	2.19E-05	7.97E-06	-5.77E-04
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.45E+03	5.64E+01	6.99E+01	1.57E+03	3.17E+01	7.06E+01	-5.58E+02
Environmental aspects on resource use: (DU) 1 door (57 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9.48E+02	3.95E+00	1.71E-02	9.52E+02	1.20E+02	5.12E+00	-1.54E+02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.53E+03	5.92E+01	7.34E+01	1.66E+03	3.24E+01	7.01E+01	-9.06E+02
Use of secondary material	kg	7.00E+00	0.00E+00	0.00E+00	7.00E+00	0.00E+00	0.00E+00	5.26E+00
Use of renewable secondary fuels	MJ	9.16E-02	0.00E+00	0.00E+00	9.16E-02	0.00E+00	7.05E-23	2.60E+02
Use of non-renewable secondary fuels	MJ	7.09E-03	2.96E+00	0.00E+00	2.97E+00	1.46E-29	8.28E-22	2.64E+01
Net use of fresh water	m <sup>3</sup>	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 door (57 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Hazardous waste disposed	kg	2.09E-02	5.00E-05	1.30E-03	2.23E-02	4.06E-05	1.00E-05	-1.82E-03
Non-hazardous waste disposed	kg	5.01E+00	4.64E-02	1.31E+00	6.37E+00	6.85E-01	6.35E+01	-9.45E+00
Radioactive waste disposed	kg	1.14E-02	0.00E+00	0.00E+00	1.14E-02	1.75E-03	4.89E-04	-4.00E-03
Components for re-use	kg	1.03E-01	0.00E+00	1.15E+01	1.16E+01	6.10E-02	0.00E+00	0.00E+00
Materials for recycling	kg	1.02E-01	0.00E+00	4.34E+00	4.44E+00	2.47E+01	0.00E+00	0.00E+00
Materials for energy recover	kg	1.93E-02	0.00E+00	0.00E+00	1.93E-02	1.17E+01	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	1.26E-01	0.00E+00	0.00E+00	1.26E-01	6.02E+00	8.17E-02	0.00E+00



## Exterior steel full door with frame

Environmental impacts: (DU) 1 door (62 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Global warming potential	kg CO <sub>2</sub> eq.	1.22E+02	3.40E+00	1.23E+01	1.38E+02	2.05E+00	4.74E+00	-6.93E+01
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	3.11E-06	0.00E+00	0.00E+00	3.11E-06	5.80E-08	5.47E-08	-6.74E-07
Acidification potential of soil and water	kg SO <sub>2</sub> eq.	4.14E-01	2.48E-02	3.44E-03	4.42E-01	9.24E-03	5.09E-03	-1.51E-01
Formation potential of tropospheric ozone	kg Ethene eq.	6.13E-02	1.80E-03	7.00E-03	7.01E-02	1.27E-03	1.22E-03	-1.95E-02
Eutrophication potential	kg (PO <sub>4</sub> ) <sup>3-</sup> eq.	5.34E-02	4.38E-03	5.62E-04	5.83E-02	5.64E-03	1.54E-03	-2.40E-02
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	6.42E-03	0.00E+00	4.56E-05	6.46E-03	9.32E-06	1.04E-05	-5.50E-03
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.51E+03	3.18E+01	6.77E+01	1.61E+03	1.04E+01	1.52E+01	-5.55E+02
Environmental aspects on resource use: (DU) 1 door (62 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.33E+02	2.22E+00	1.66E-02	1.35E+02	1.24E+00	1.61E+00	5.63E+01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.67E+03	3.34E+01	7.11E+01	1.78E+03	1.11E+01	1.36E+01	-3.90E+02
Use of secondary material	kg	5.23E+01	0.00E+00	0.00E+00	5.23E+01	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	8.93E-01	0.00E+00	0.00E+00	8.93E-01	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	3.79E-03	1.67E+00	0.00E+00	1.67E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m <sup>3</sup>	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 door (62 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Hazardous waste disposed	kg	2.53E-02	3.24E-05	1.26E-03	2.66E-02	1.29E-05	1.43E-05	-1.75E-02
Non-hazardous waste disposed	kg	9.08E+00	3.01E-02	1.27E+00	1.04E+01	1.67E+00	1.01E+01	-5.64E+00
Radioactive waste disposed	kg	4.99E-02	0.00E+00	0.00E+00	4.99E-02	3.07E-04	4.88E-05	-3.85E-02
Components for re-use	kg	9.99E-01	0.00E+00	1.11E+01	1.21E+01	6.00E-01	0.00E+00	0.00E+00
Materials for recycling	kg	9.59E-01	0.00E+00	4.20E+00	5.16E+00	5.88E+01	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## Exterior steel door with glazing and frame

Environmental impacts: (DU) 1 door (71 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Global warming potential	kg CO <sub>2</sub> eq.	1.31E+02	3.53E+00	1.38E+01	1.49E+02	2.06E+00	4.40E+00	-7.03E+01
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	3.13E-06	0.00E+00	0.00E+00	3.13E-06	4.96E-08	4.96E-08	-7.02E-07
Acidification potential of soil and water	kg SO <sub>2</sub> eq.	4.67E-01	2.58E-02	3.86E-03	4.96E-01	9.22E-03	5.28E-03	-1.53E-01
Formation potential of tropospheric ozone	kg Ethene eq.	6.51E-02	1.87E-03	7.86E-03	7.48E-02	1.23E-03	1.16E-03	-2.04E-02
Eutrophication potential	kg (PO <sub>4</sub> ) <sup>3-</sup> eq.	6.00E-02	4.55E-03	6.30E-04	6.52E-02	5.56E-03	1.49E-03	-2.44E-02
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	6.59E-03	0.00E+00	5.11E-05	6.64E-03	7.62E-06	9.43E-06	-5.59E-03
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.65E+03	2.91E+01	7.60E+01	1.76E+03	1.01E+01	1.52E+01	-5.66E+02
Environmental aspects on resource use: (DU) 1 door (71 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.43E+02	2.04E+00	1.86E-02	1.45E+02	1.90E+00	1.64E+00	5.69E+01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.82E+03	3.06E+01	7.98E+01	1.93E+03	1.17E+01	1.38E+01	-3.99E+02
Use of secondary material	kg	5.38E+01	0.00E+00	0.00E+00	5.38E+01	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	9.07E-01	0.00E+00	0.00E+00	9.07E-01	0.00E+00	1.44E-23	0.00E+00
Use of non-renewable secondary fuels	MJ	4.02E-03	1.53E+00	0.00E+00	1.53E+00	2.98E-30	1.69E-22	0.00E+00
Net use of fresh water	m <sup>3</sup>	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 door (71 kg) with frame								
Indicator	Unit	A1	A2	A3	A1-A3	C3	C4	D
Hazardous waste disposed	kg	2.69E-02	3.18E-05	1.41E-03	2.83E-02	1.07E-05	1.30E-05	-1.78E-02
Non-hazardous waste disposed	kg	9.74E+00	2.95E-02	1.42E+00	1.12E+01	1.63E+00	1.63E+01	-7.43E+00
Radioactive waste disposed	kg	5.17E-02	0.00E+00	0.00E+00	5.17E-02	6.40E-04	6.58E-05	-3.92E-02
Components for re-use	kg	1.01E+00	0.00E+00	1.25E+01	1.35E+01	6.09E-01	0.00E+00	0.00E+00
Materials for recycling	kg	9.74E-01	0.00E+00	4.71E+00	5.69E+00	6.16E+01	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

### 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 (subclause 8.1.3.) <input checked="" type="checkbox"/> external <input type="checkbox"/> internal
External verification of EPD: Ph.D. Halina Prejzner  LCA, LCI audit and input data verification: Ph.D. Eng. Justyna Tomaszewska, j.tomaszewska@itb.pl  Verification of LCA: Ph.D. Michał Piasecki

### Normative references

- ITB PCR A General Product Category Rules for Construction Products
- 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
- PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- KOBIZE Wskaźniki emisyjności CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO i pyłu całkowitego dla energii elektrycznej, grudzień 2017
- PN-EN 14351-1+A2:2016-10 Okna i drzwi -- Norma wyrobu, właściwości eksploatacyjne -- Część 1: Okna i drzwi zewnętrzne

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# **CERTIFICATE No 103/2020**

## **of TYPE III ENVIRONMENTAL DECLARATION**

Product:

**Exterior doors**

Manufacturer:

**Porta KMI Poland Sp. z o.o. Sp. k.**

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 15804:2012+A2:2019**

**Sustainability of construction works.**

**Environmental product declarations.**

**Core rules for the product category of construction products.**

This certificate, issued for the first time on 27<sup>th</sup> March 2020 is valid for 5 years  
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics  
and Environment Department

Barbara Pietruszka, PhD



Deputy Director  
for Research and Innovation

Krzysztof Kuczyński, PhD

Warsaw, March 2020