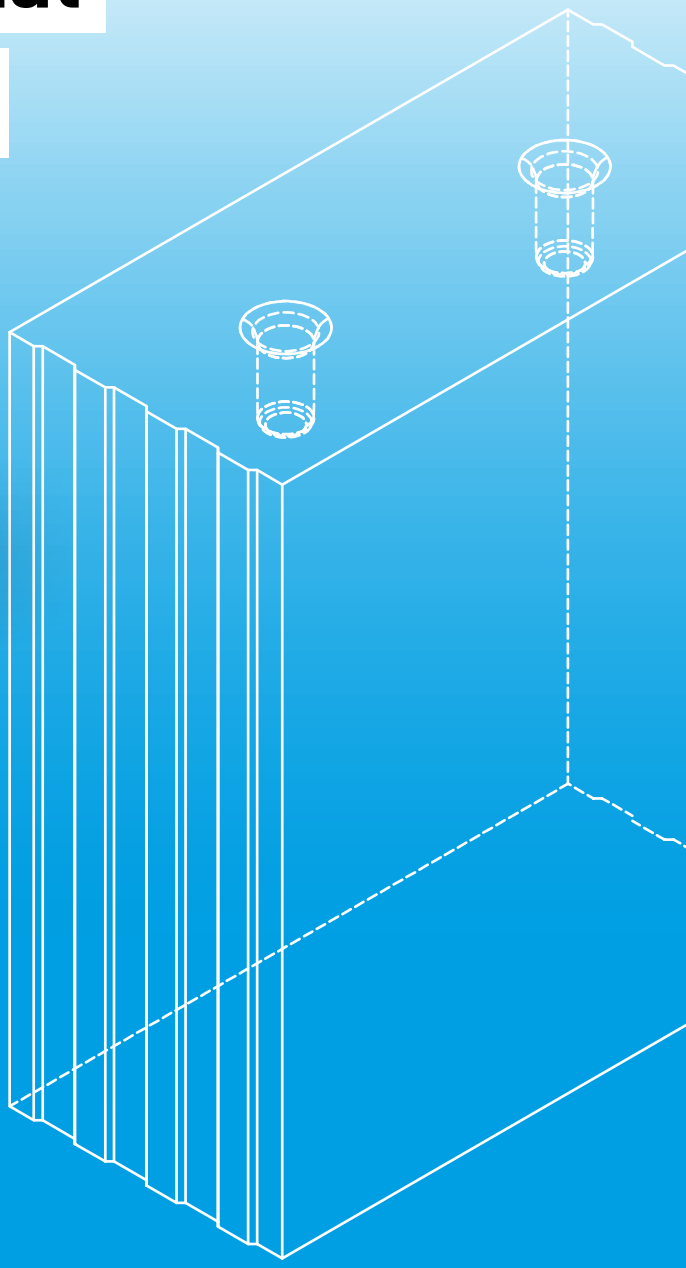
Xella

Type III Environmental Product Declaration

No. 874/2025



The carbon footprint of our products has been verified by:

Instytut Techniki Budowlanej

ECO PLATFORM EPD VERIFIED

Issuance date: 25.11.2025
Validation date: 23.02.2026
Validity date: 25.11.2030

Silka

Calcium silicate units

silka

Owner of the EPD:
Xella Polska sp. z o. o.
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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-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 standard: EN 771-2+A1:2015-10

Service Life: 150 years for standard product

PCR: ITB-PCR A (PCR based on EN 15804+A2)

Declared unit: 1 m^3

Reasons for performing LCA: B2B

Representativeness: Polish, European, 2024/2025

MANUFACTURER

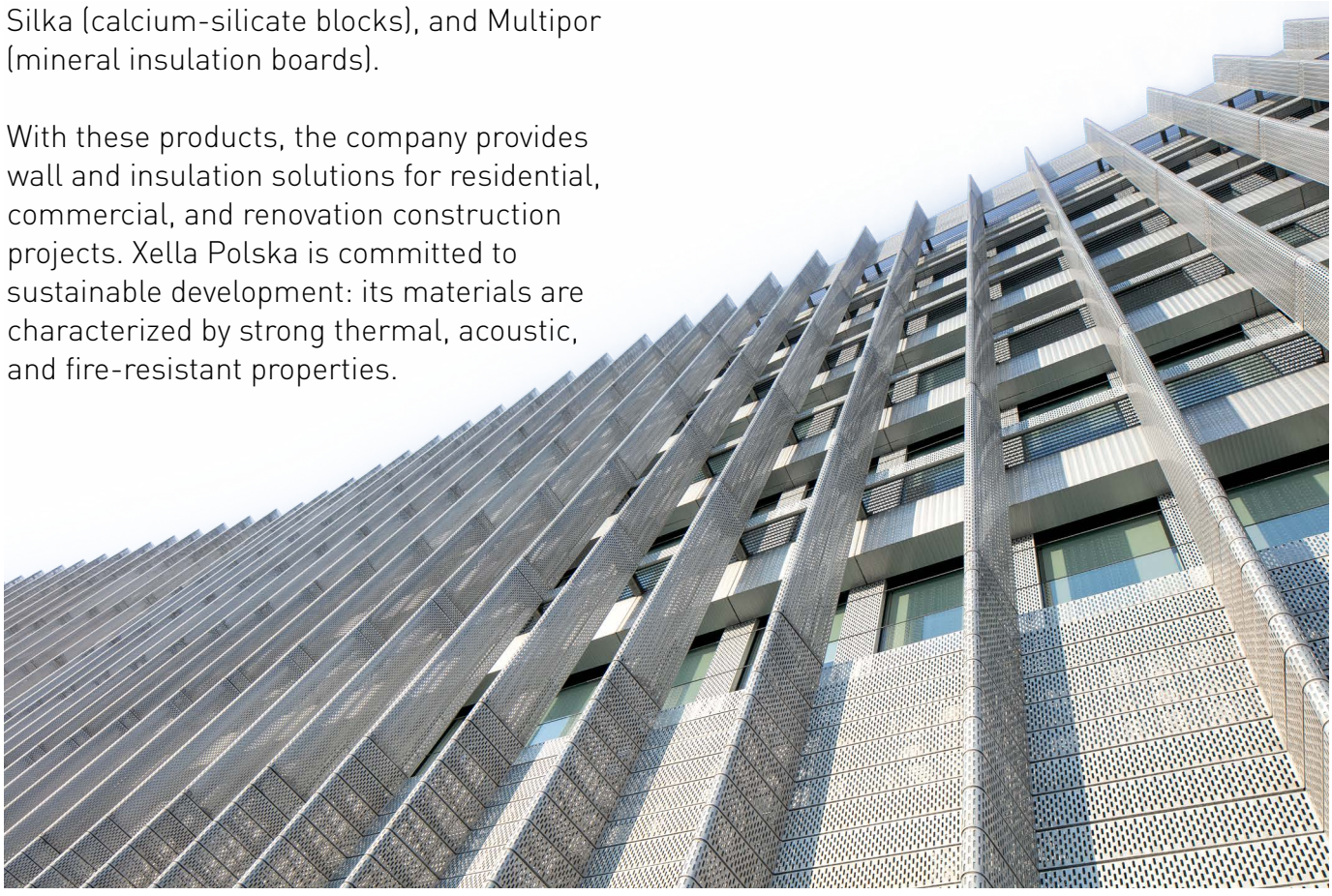
Xella Polska Sp. z o. o. is a leading manufacturer of innovative and energy-efficient construction materials in Poland.

The company is part of the international Xella Group, which operates in many European countries. Xella Polska is headquartered in Warsaw (48 Komitetu Obrony Robotników Street). The main brands offered by Xella include Ytong (autoclaved aerated concrete), Silka (calcium-silicate blocks), and Multipor (mineral insulation boards).

With these products, the company provides wall and insulation solutions for residential, commercial, and renovation construction projects. Xella Polska is committed to sustainable development: its materials are characterized by strong thermal, acoustic, and fire-resistant properties.

The company also invests in prefabrication — since 2023, the plant in Ostrołęka has operated a production line for large format Ytong panels, aimed at accelerating construction processes and reducing on-site labor needs.

The company employs approximately 650–700 people in Poland, and its production facilities are located across the country.



PRODUCTS DESCRIPTION AND APPLICATION

Silicates are a building material made from materials of natural origin: quartz sand (approx. 89% by weight), lime (8%) and water (3%). They are free of chemical contaminants and remain a highly ecological product at every stage of their life. Silicate, or lime and sand products, is an extremely versatile material that is used in various types of construction. Thanks to properties such as high compressive strength, very good sound insulation, thermal insulation and high fire resistance, silicate can be used to bring in buildings for various purposes. Silicates are mineral building blocks, sometimes informally referred to as silicate hollow blocks.

Silicates are therefore ideal materials for constructing load-bearing walls, partition walls, and even façade walls. They allow the creation of long-lasting and visually appealing structures that will endure for decades. In addition, Silka products offer extra benefits. Examples include high acoustic insulation and large format Silka Tempo blocks that facilitate and speed up construction work. They are also completely non-combustible (fire reaction class A1). Another distinguishing feature is their highest dimensional accuracy (± 1 mm). The list of products manufactured from silicates is presented in table no. 1

Product	Length [mm]	Width [mm]	Height [mm]	Denisty class*	Compressive strength [MPa]	Profiling	Face front side
Silka E blocks	333	80; 120; 150; 180; 240	199	1,4; 1,6	15; 20	tongue and groove	smooth
Silka E-A blocks		180		1,8; 2,0	20; 25		
Silka E-S blocks		240		1,8	20; 25		
Silka EQ supplementary blocks		180; 240	98; 124; 174	1,8	20		
Silka Tempo blocks	498; 373; 248	180; 240	600	2,0	20		
Silka Tempo Light blocks	498	240	600	1,8	15		

Table 1. Types, dimensions and properties of produced silicates blocks

Silka E
Blocks for load-bearing walls

Silka E-A
Blocks for acoustic walls

Silka E-S
Blocks for foundation and thermal mass walls

Silka Tempo / Light
Large-format blocks

LIFE CYCLE ASSESSMENT (LCA) – General rules applied

Declared unit
Declared unit is 1 m^3 of siliacte product manufactured in Iława (Poland).

System boundary
The life cycle analysis of the declared products covers "Product Stage" A1-A3, A4-A5, B1, 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 2% 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 PCR A. Production of silicates is a line process executed by Xella Polska Sp. z o. o. at Silka Plant at ul. Wojska Polskiego 44, 14–200 Iława. Allocation was done on product mass basis. All impacts related to the extraction and processing of raw materials are allocated to module A1, and impacts related to the transport of raw materials to the factory are allocated to module A2 of the LCA. Impacts from the global line production of Silka Polska Sp. z o. o. were inventoried and 100% were allocated silicates. Water and energy consumption, associated emissions and generated wastes are allocated to module A3.

System limits
100% 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. It is assumed that the total sum of omitted processes does not exceed 2% of all impact categories. In accordance with EN 15804+A2 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
The product includes sand, lime, water and packaging materials mainly from local suppliers. The means of transport are trucks. Polish and European fuel averages were used for calculations. Polish and European standards for average combustion were used for calculations. Data on mode of transport and distances, as reported by suppliers were used for those materials and parts contributing more than 0.1 % of total product mass.

Module A3: Production
The production of Silka calcium-silicate units at Xella Polska begins with dosing sand, lime and water in controlled proportions. After mixing, the lime undergoes slaking, which activates the binder and forms a plastic, homogeneous mass. The sand–lime mixture is then shaped under high pressure, giving the blocks their final geometry and contributing significantly to their mechanical strength. In the next stage, the formed elements are placed in autoclaves, where they are cured for several hours in saturated steam at elevated temperature and pressure. During autoclaving, calcium silicate hydrates are formed, providing Silka elements with high compressive strength, dimensional stability, and long-term durability. After curing, the finished units are cooled, subjected to quality control, and then palletized and packed for transport. A diagram of the production process is shown in Fig. 2.

Module A4: Transport to a construction site
The blocks and elements produced are delivered to Polish as well as foreign customers. In the adapted scenario an average distance of 100 km from the factory gate to a recipient is assumed. Means of transport include 16 - 32 t lorry (EURO 5) with fuel consumption of 35 l per 100 km.

Module A5: Installation
The blocks are installed as predefined elements using auxiliary materials or machinery. The Calcium silicate products are installed in Europe. The declared product is thus the inclusion of the construction waste in the product.

Module B1: Use
During the use stage of the building, the product requires no maintenance or repair, and its environmental impact under normal conditions of use is neutral. However, in the case of sand-lime blocks, Module B1 takes into account the carbonation process, i.e., the gradual absorption of carbon dioxide () from the atmosphere by the lime binder contained in the material. These values represent a negative global warming potential (GWP), which offsets part of the emissions from the earlier stages of the product life cycle. The amount of absorbed is directly proportional to the lime content in the block and the assumed degree of carbonation. In the scenario 100-year building service life is taken into consideration.

Modules C1-C4 and D: End-of-life (EoL)
In the adapted scenario, dismantling of silicates (C1) is performed as part of building renovation or demolition processes, where environmental impacts from declared products can be considered as minor (<1%). There are no specific deconstruction methods, applied in Poland, in regards with the silicates so impact the electric tools and construction machines was assumed. During the demolition process the major amount of the products contribute to the construction and demolition wastes which can be processed on site or in a waste processing plant. It is assumed that 100% of silicates are recovered at the EoL cycle. Recovered material is transported to either to landfill or construction site distant by 100km, on 16-32t lorry (EURO 5) with fuel consumption of 35l per 100 km. In the adapted scenario 90% of the silicates is recycled and further used as aggregate for road foundation or ballast(credits presented in module D) while remaining 10% is forwarded to landfill in the form of mixed construction and demolition wastes.

Environmental burdens declared in module C4 are associated with waste-specific emissions to air, soil and groundwater. Electricity at end-of-life (module C) has been modelled.

Material	Material recovery	Recycling	Landfilling
silicates	100 %	90 %	10 %

Table 2. End-of-life scenario for the silicates

Electricity at end-of-life (module D) has been modelled using an average EU-27 electricity mix as the location where the product reaches end-of-life is unknown.

Data quality
The values determined to calculate the LCA originate from verified Xella Polska Sp. z o.o. inventory data. The data selected for LCA originate from ITB LCI questionnaires completed by Xella Polska Sp. z o.o. 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. Specific (LCI) data quality analysis was a part of the input data verification.

Data collection period
The data for manufacture of the declared products refer to period between 01.05.2024 – 31.04.2025 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

Assumptions and estimates
The impacts of silicates were aggregated using weighted average.

Calculation rules
LCA was done in accordance with ITB PCR A based on EN 15804+A2.

Databases
The data for the processes come from the following databases: Ecoinvent v.3.11. Specific data quality analysis was a part of external audit.

Additional information

The electricity (Ecoinvent v 3.11) emission factor used is 0.0177 kg /kWh (Wind Turbines) and 0.004 kg /kWh (Hydro). The manufacturer has presented valid and legal certificates of origin of electricity. As a general rule, no particular environmental or health protection measures other than those specified by law are necessary. No mass balance approach was used. Silicates composition is free from biogenic carbon.

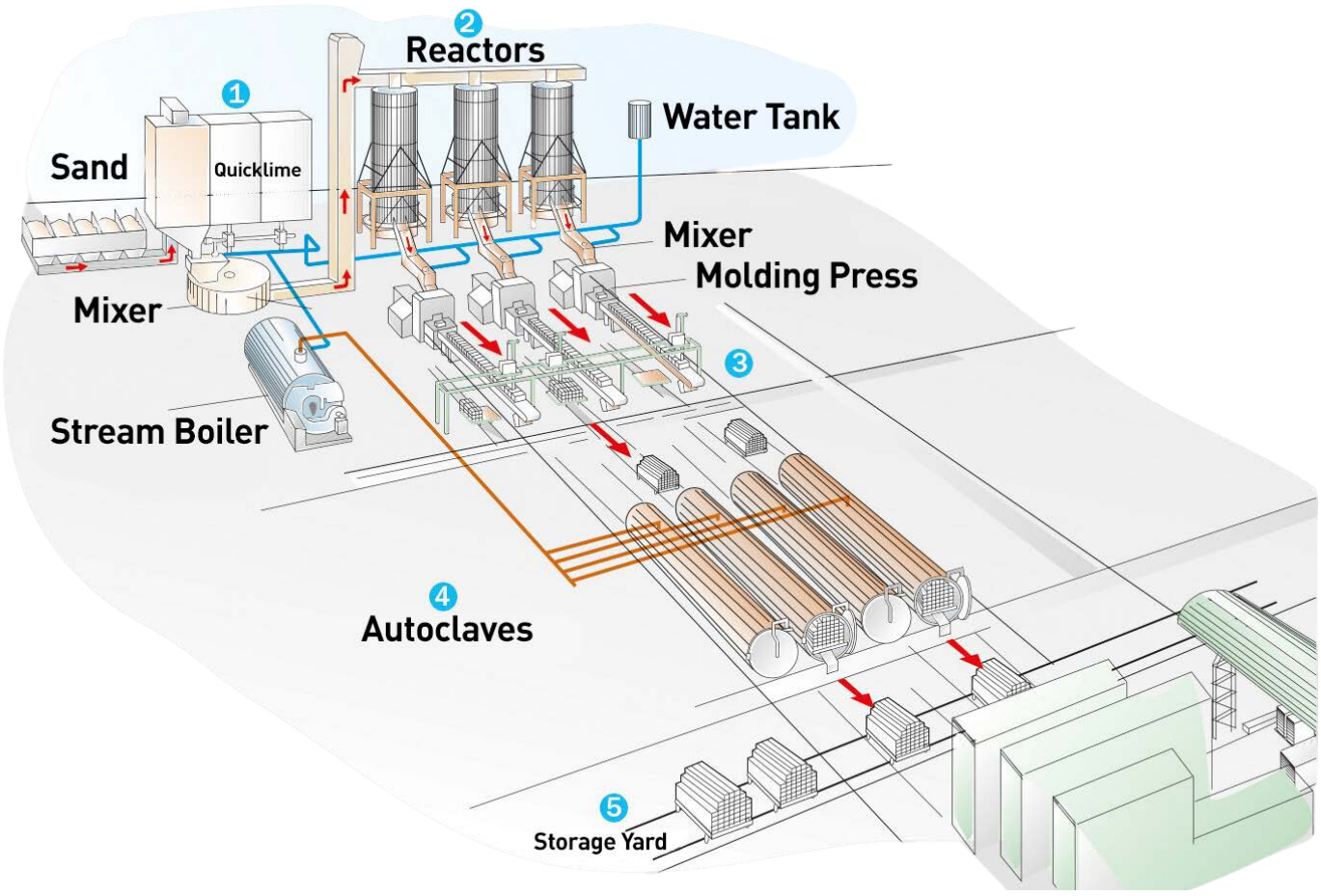
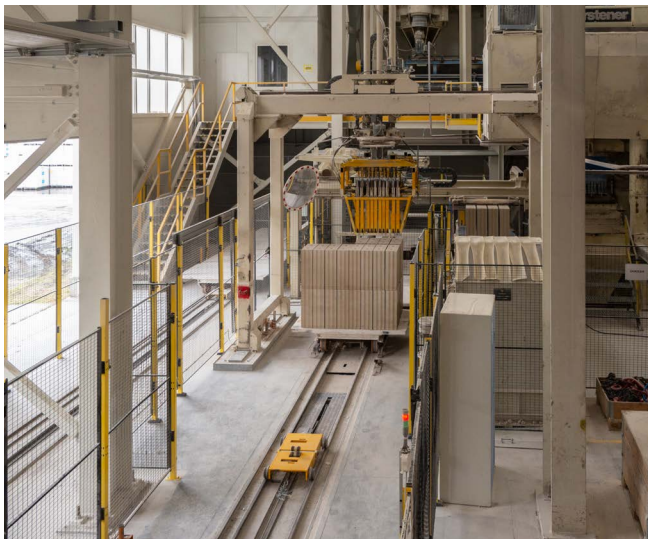


Fig. 2. The scheme of production by Xella Polska Sp. z o. o.



LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 m^3 of silicates produced by Xella Polska Sp. z o.o. produced in Silka Plant at Iława.

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

Product	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Global Warming Potential	eq. kg	1.45E+02	4.78E+00	3.91E+01	1.89E+02	2.62E+01	2.16E+00	-8.39E+01	5.39E+00	2.62E+01	2.85E+01	1.67E+00	-1.42E+01
Greenhouse potential - fossil	eq. kg	1.50E+02	4.78E+00	3.91E+01	1.94E+02	2.61E+01	2.15E+00	-8.39E+01	5.38E+00	2.61E+01	2.35E+01	1.65E+00	-1.41E+01
Greenhouse potential - biogenic	eq. kg	-5.02E+00	3.05E-03	1.41E-02	-5.01E+00	8.92E-02	5.80E-03	0.00E+00	1.45E-02	8.92E-02	5.02E+00	1.67E-02	-8.48E-04
Global warming potential - land use and land use change	eq. kg	1.66E-02	1.59E-03	3.58E-03	2.18E-02	1.02E-02	3.36E-04	0.00E+00	8.41E-04	1.02E-02	9.22E-03	1.67E-03	-6.48E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1.36E-06	1.04E-07	1.76E-06	3.23E-06	6.04E-06	1.18E-08	0.00E+00	2.96E-08	6.04E-06	5.44E-06	5.03E-07	-2.66E-06
Soil and water acidification potential	eq. mol H+	2.04E-01	1.53E-02	2.98E-02	2.49E-01	1.06E-01	2.28E-02	0.00E+00	5.69E-02	1.06E-01	9.53E-02	1.39E-02	-5.94E-01
Eutrophication potential - freshwater	eq. kg P	3.17E-03	3.26E-04	7.73E-04	4.27E-03	1.75E-03	3.71E-03	0.00E+00	9.27E-03	1.75E-03	1.58E-03	4.80E-04	-2.15E-02
Eutrophication potential - seawater	eq. kg N	5.40E-02	5.17E-03	9.87E-03	6.90E-02	3.20E-02	3.22E-03	0.00E+00	8.05E-03	3.20E-02	2.88E-02	4.81E-03	-5.27E-02
Eutrophication potential - terrestrial	eq. mol N	6.04E-01	5.62E-02	1.07E-01	7.67E-01	3.49E-01	2.81E-02	0.00E+00	7.02E-02	3.49E-01	3.14E-01	5.23E-02	-7.08E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	3.28E-01	2.33E-02	7.01E-02	4.21E-01	1.07E-01	8.08E-03	0.00E+00	2.02E-02	1.07E-01	9.61E-02	1.51E-02	-1.70E-01
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	8.70E-05	1.65E-05	1.45E-05	1.18E-04	9.25E-05	8.11E-07	0.00E+00	2.03E-06	9.25E-05	8.33E-05	5.60E-06	-4.21E-03
Abiotic depletion potential - fossil fuels	MJ	8.41E+02	6.78E+01	5.98E+02	1.51E+03	3.87E+02	3.40E+01	0.00E+00	8.49E+01	3.87E+02	3.49E+02	3.82E+01	-4.97E+02
Water deprivation potential	eq. m^3	9.26E+01	3.55E-01	1.05E+00	9.40E+01	1.79E+00	6.49E-01	0.00E+00	1.62E+00	1.79E+00	1.61E+00	2.22E-01	-3.68E+01

Table 4. Life cycle assessment (LCA) results for specific product – environmental impacts (DU: 1 m^3)

Indicator	Unit	A1-A3	A4-A5+B1	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 5. Life cycle assessment (LCA) results for specific product – additional impacts indicators (DU: 1 m^3)

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	1.51E+02	1.10E+00	4.66E+01	1.98E+02	5.56E+00	2.79E+00	6.98E+00	5.56E+00	5.00E+00	0.00E+00	-5.71E+01
Consumption of renewable primary energy resources used as raw materials	MJ	6.03E+01	0.00E+00	0.00E+00	6.03E+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	2.11E+02	1.10E+00	4.66E+01	2.59E+02	5.56E+00	2.79E+00	6.98E+00	5.56E+00	5.00E+00	0.00E+00	-5.71E+01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	8.05E+02	6.78E+01	5.73E+02	1.45E+03	3.87E+02	3.40E+01	8.49E+01	3.87E+02	3.49E+02	0.00E+00	-4.97E+02
Consumption of non-renewable primary energy resources used as raw materials	MJ	3.62E+01	0.00E+00	2.49E+01	6.11E+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 non-renewable primary energy resources	MJ	8.41E+02	6.78E+01	5.98E+02	1.51E+03	3.87E+02	3.40E+01	8.49E+01	3.87E+02	3.49E+02	0.00E+00	-4.97E+02
Consumption of secondary materials	kg	4.39E-01	3.03E-02	8.10E-02	5.50E-01	1.30E-01	2.95E-03	7.38E-03	1.30E-01	1.17E-01	0.00E+00	-3.00E-01
Consumption of renew. secondary fuels	MJ	2.24E+00	3.97E-04	1.08E-04	2.24E+00	1.43E-03	1.49E-05	3.73E-05	1.43E-03	1.29E-03	0.00E+00	-1.83E-02
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	0.00E+00
Net consumption of freshwater	m^3	2.21E+00	8.19E-03	2.87E-01	2.50E+00	4.87E-02	9.75E-02	2.44E-01	4.87E-02	4.39E-02	5.96E-03	-9.00E-01

Table 6. Life cycle assessment (LCA) results for specific product - the resource use (DU: 1 m^3)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	8.95E-01	9.71E-02	1.59E-01	1.15E+00	4.35E-01	2.63E-01	6.58E-01	4.35E-01	3.91E-01	6.01E-05	-3.46E+00
Non-hazardous waste	kg	3.34E+01	2.08E+00	8.77E+00	4.42E+01	7.72E+00	1.77E+01	4.43E+01	7.72E+00	6.95E+00	1.57E+02	-9.66E+01
Radioactive waste	kg	6.06E-04	1.99E-05	7.14E-05	6.97E-04	2.89E-05	5.10E-06	1.27E-05	2.89E-05	2.60E-05	2.32E-04	-1.31E-03
Components for re-use	kg	0.00E+00	0.00E+00	1.26E-01	1.26E-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	1.31E-02	8.11E-04	1.56E-03	1.55E-02	1.20E-03	2.28E-04	5.70E-04	1.20E-03	1.08E-03	0.00E+00	-6.72E-03
Materials for energy recovery	kg	2.30E-05	4.30E-06	7.92E-06	3.52E-05	9.70E-06	3.66E-07	9.16E-07	9.70E-06	8.73E-06	0.00E+00	-6.24E-04
Exported Energy	MJ	6.97E-01	2.96E-02	5.19E-02	7.78E-01	0.00E+00	1.09E-01	2.72E-01	0.00E+00	0.00E+00	0.00E+00	-1.35E+00

Table 7. Life cycle assessment (LCA) results for specific product – waste categories (DU: 1 m^3)

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, V1.6 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
- EN 771-2:2011+A1:2015 Requirements for masonry units. Calcium silicate masonry units
- KOBiZE Wskaźniki emisyjności , SO_2, NO_x, CO i pyłu całkowitego dla energii elektrycznej, grudzień 2024
- https://ecoinvent.org/

LCA,LCI, input data verification
Michał Piasecki, PhD. D.Sc.

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Thermal Physics, Acoustics and Environment Department

02-656 Warsaw, Ksawerów 21

CERTIFICATE № 874/2025
of TYPE III ENVIRONMENTAL DECLARATION

Products:

SILKA - calcium silicate units

Manufacturer:

Xella Polska sp. z o.o.

Komitetu Obrony Robotników 48, 02-146 Warsaw, Poland

Silka plant in Iława

Wojska Polskiego 44, 14-200 Iława, 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.

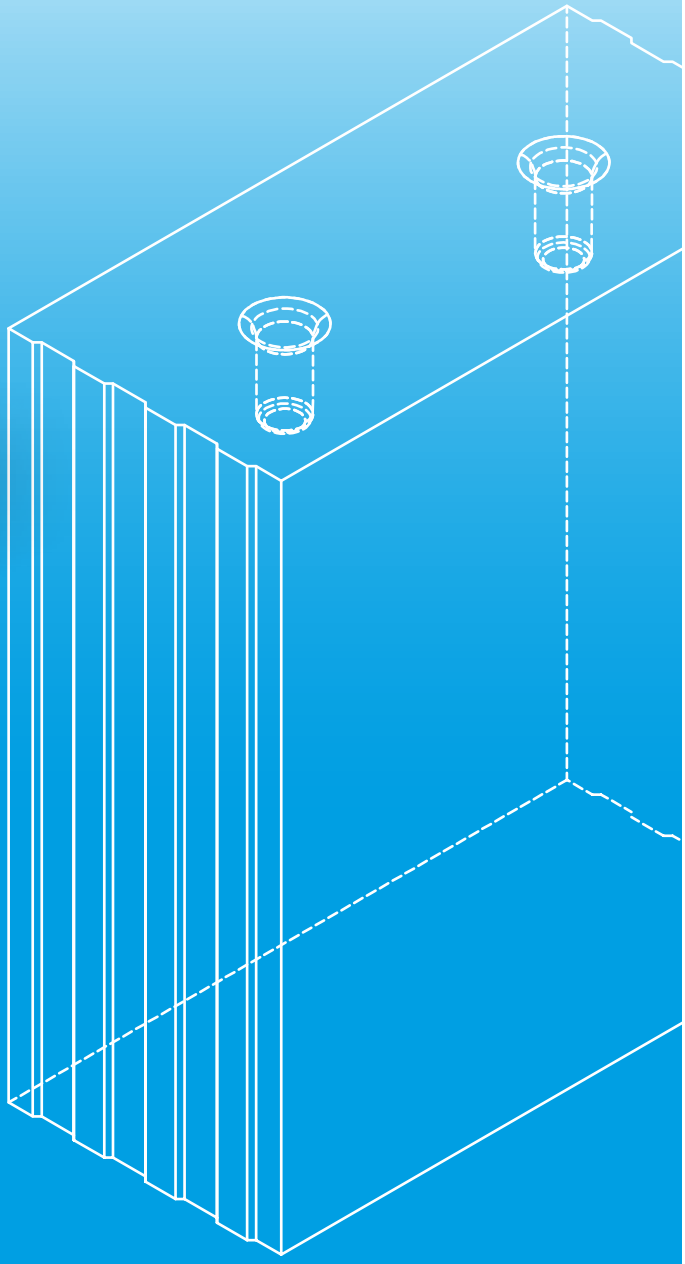
This certificate, issued on 25th November 2025 is valid for 5 years
or until amendment of mentioned Environmental Declaration

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



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