

epd square.

Programme operator: EPD Square, s.r.o. Registration number: SQ 00-051

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Validity: 5 years

Valid until: 07.11.2030

Specific EPD

Scope of the EPD: Europe





Saint-Gobain Construction Products, s.r.o.



GENERAL INFORMATION

Programme information

PROGRAMME: EPD Square, s.r.o.

ADDRESS: Lermontovova 3, 811 05 Bratislava, Slovakia

WEBSITE: www.epdsquare.com **E-MAIL:** info@epdsquare.com

PCR information

Product Category rules (PCR)

CEN standard EN 15804:2012+A2:2019/AC:2021 as the Core Product Category Rules (PCR)

Product category rules (PCR): EPD Square PCR v1.0, 2024

PCR review was conducted by: The Technical Committee of the EPD Square. See

www.epdsquare.com for a list of members.

Chairs of the PCR review: Marcela Ondova.

Verification

External	and	independent	('third-party')	verification	of the	declaration	and	data,	according	to	ISO
14025:20	006, ۱	/ia									
EPD veri	ficati	on through:									

☐ Individual EPD verification without a pre-verified LCA/EPD tool

☑ Individual EPD verification with a pre-verified LCA/EPD tool

☐ EPD process certification* without a pre-verified LCA/EPD tool

☐ EPD process certification* with a pre-verified LCA/EPD tool

☐ Fully pre-verified EPD tool

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

☑ EPD verification by individual verifier

Third party verifier: Daniel Satola, Daniel Satola Consulting, danielsatolaconsulting@gmail.com

Approved by: EPD Square, s.r.o.

Ownership and limitation on use of EPD

The EPD owner has the sole ownership, liability and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterization factors); and be valid at the time of comparison. For further information about comparability, see EN 15804:2012+A2:2019/AC:2021 and ISO 14025:2006.



Information about EPD Owner

Address and contact information about the EPD owner: Saint-Gobain Construction Products, s.r.o., Stará Vajnorská 139, 831 04 Bratislava, Slovakia, <u>poradenstvo@saint-gobain.com</u>

Contact person: Vladimír Balent, vladimir.balent@saint-gobain.com

Description of the organization of the EPD owner: An international company operating in 52 countries, member of the Saint-Gobain Group with more than 190,000 employees. The Weber business activities include the manufacture and sale of facade materials and interior surface treatment materials, as well as the provision of technical support and services related to product sales.

LCA practitioner: Ing. L'udmila Vaculová Mečiarová, PhD., meciarova@epdclarity.com, EPD Clarity, s.r.o.

Communication: The intended use of this EPD is for B2B communication.

Product information

Product name: webertherm KPS

Visual representation of the product:

UN CPC CODE: 37510 - Non-refractory mortars and concretes

Manufacturing site: Stará Vajnorská 139, 831 04 Bratislava, Slovakia



Product description

Webertherm KPS is an industrially manufactured dry mortar mix designed for bonding and skimming thermal insulation based on polystyrene (EPS), extruded polystyrene (XPS) and mineral wool (MW). It is used for bonding insulation materials indoors and outdoors and for laying reinforcement mesh.

The product properties and production control system comply with the criteria of EAD 040083-00-0404.

Webertherm KPS is used for bonding insulation materials indoors and outdoors. In combination with a suitable type of glass fibre mesh to create a base layer on the face side of thermal insulation materials under the final plaster.

For more information: https://www.sk.weber/

Technical data/physical characteristics:

Parameter	Value / Desci	ription
Reaction to fire	A1	STN EN 13501-1
Installation information (kg/m²)	7 – 11 kg/m²	-
Water absorption	Max. 0,5 kg/m ² after 24 h.	EAD 040083-00-0404
Water vapor permeability max. 0,5 m	μ = 26 sd = 0,078 m at 3 mm thickness	STN EN 12086
Adhesion to concrete after 28 days	min. 250 kPa	EAD 040083-00-0404
Adhesion to EPS, MW, XPS after 28 days	min. 80 kPa	EAD 040083-00-0404
Thermal conductivity	λ10,dry (P=50%)] = 0,53 W/mK	STN EN 1745
Maturation time (min.)	Approx. 5 min.	-
Processing time (h)	Approx. 60 min.	-



Content declaration

Presented values are per functional unit being 1 kg of the dry final product. Description of the main components and/or materials:

Product components	Weight (%)	Post-consumer recycled material weight (%)	Biogenic material, weight- %	Biogenic material, kg C/kg of DU
Binder	25 - 40%	0%	0%	0 kg C
Minerals	60 - 70%	0%	0%	0 kg of C
Additives	1 - 3%	0%	0%	0 kg of C
Sum	100%	0%	0%	0
Packaging materials	Weight (kg)	Weight versus the product (%)	Weight biogenic carbon, kg C/kg product	Biogenic material, kg C/kg of DU
LDPE foil	0,0006	0,06 %	0,0000	0,0000
Paper bag	0,0026	0,26 %	0,0010	0,0010
Wooden pallet	0,0184	1,84%	0,0083	0,0083
Sum	0,0216	2,16 %	0,0093	0,0093

Hazardous substances

At the date of issue of this declaration, there is no "Substance of Very High Concern" (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.



LCA information

TYPE OF EPD	Cradle to gate with options, module C1-C4, module D and optional modules (A4-A5).
DECLARED UNIT	1 kg of dry powder
SYSTEM BOUNDARIES	A1-A5, C1-C4 and D
REFERENCE SERVICE LIFE (RSL)	The Reference Service Life (RSL) of the mortar product is 50 years. This 50-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.
CUT-OFF RULES	In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred. Flows related to human activities such as employee transport are excluded. The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.
ALLOCATIONS	A mass allocation has been applied. The polluter pays and the modularity principles as well have been followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope: Europe Data is collected from one production site Stará Vajnorská 139 located in Slovakia. Data collected for the year 2023
BACKGROUND DATA SOURCE	Databases from OneClick LCA 2023 (including material-specific EPD) and ecoinvent v.3.10.1, ecoinvent v3.11, IDEMAT, ProBas, EUROSTAT EF Package 3.1
SOFTWARE	OneCllick LCA

Data quality declaration

The data was collected from internal records and reporting documents from Saint-Gobain Construction Products, s.r.o. The data quality information has been provided according to the requirements of EN 15941. The data assessment was done using the Product Environmental Footprint Category Rules. The data has been collected internally, considering the latest available average production amounts and measurements during the time period of 2023. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects 100% inventory data quality. The quality level in this study is qualified as Good. Data quality rating procedure has been performed using a rating system where "1" means Very good quality, and "5" means Very poor quality. No fair, poor or very poor data was found during the assessment of relevant data.

Geographical rating	Technology rating	Time-related rating	Average rating
1,8	1,6	1,0	1,5



Description of system boundaries

System bou	ndarie	es (X	=inclu	ıded. I	MND=n	nodul	e not	decla	ared)								
	PRODUCT CONSTRUC TION STAGE USE STAGE								END	OF LI	(GE	BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY					
	Raw material supply	Transport	Manufacturing	Transport	Construction- Installation process	Use Maintenance Repair		Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport Waste processing		Disposal	Reuse-recovery	
Module	A1	A2	А3	A4	A5	В1	B2	ВЗ	В4	B5	B6	В7	C1	C2	C3	C4	D
Modules declared	Х	Х	Х	х	Х	MN D	MN D	MN D	MN D	MN D	MN D	MN D	Х	Х	Х	Х	×
Geography	EU	EU	SK	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used Variation products Variation Not relevant Not relevant																	
sites	Not	relev	/ant														

Life cycle stages

A1-A3. Product stage

The product stage of plaster products is subdivided into 3 modules A1, A2 and A3 respectively "raw material supply", "transport to manufacturer" and "manufacturing".

A1. Raw materials supply

This module includes the extraction and transformation of raw materials. Within the product stage accurate data has been used. In the case of absence in the database, it was modelled as close to reality as possible using proxy, representative datapoint.

A2. Transport to the manufacturer

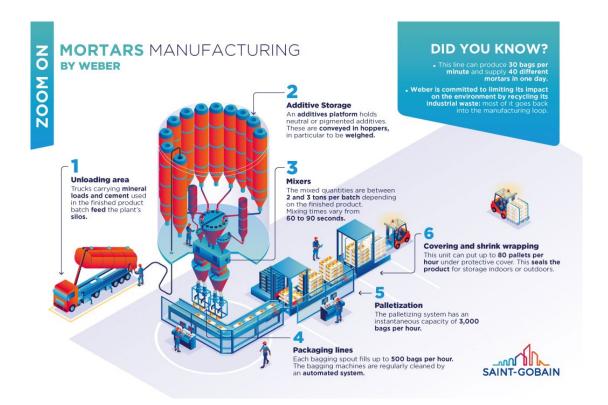
This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road transportation.

A3. Manufacturing

This module includes the manufacture of products and the manufacture of packaging. The production of packaging material is considered at this stage. The processing of any waste arising from this stage is also included. In the plant, lots of products are produced. Therefore, electricity, heating, natural gas, and LPG are allocated on yearly consumption. The allocation is based on the annual consumption as well as the total amount (tonnage) of produced products.



Manufacturing process flow diagram



The manufacturing activities include grinding, drying, storing, mixing, packing and internal transportation. Packaging-related flows in the production process and all up-stream packaging are included in the manufacturing module, i.e., wooden pallets, bags, and LDPE film.

A4-A5. Construction process stage

The construction process is divided into 2 modules: A4, Transport to the building site and A5, Installation in the building.

A4. Transport to the building site

This module includes transport from the production gate to the building site. Transport is calculated based on a scenario with the parameters described in the following table.

PARAMETER	VALUE
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long-distance truck, boat, etc.	Freight truck trailer 24 t payload, diesel consumption 38 liters for 100 km
Distance	125 km
Capacity utilisation (including empty returns)	100% (0% empty returns)
Bulk density of transported products*	1400 – 1600 kg/m³
Volume capacity utilisation factor	1 (by default)

A5. Installation in the building

This module includes: the installation of the product, the transport and management of packaging and product waste. Product is installed manually on the construction site, therefore energy consumption is negligible. The parameters are presented in the following table. Losses during installation are less than 1%.



PARAMETER	VALUE / DESCRIPTION
Ancillary materials for installation (specified by materials)	None
Water use	0,24 l/kg of product
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None
Output materials (specified by type) as results of waste processing at the building site e.g. of collection for recycling, for energy recovering, disposal	Packaging waste: Paper: 0,0026 kg/ kg of product (83% recycle, 8% recovery, 9% landfill) PE: 0,0006 kg/ kg of product (40% recycle, 37% recovery, 23% landfill) Wooden pallet: 0,0018 kg/ kg of product (32% recycle, 30% recovery, 38% landfill)
Direct emissions to ambient air, soil, and water	None



B1-B7. Use stage (excluding potential savings)

The use stage is divided into the following modules:

- **B1**: Use
- **B2**: Maintenance
- **B3**: Repair
- **B4**: Replacement
- **B5**: Refurbishment
- **B6**: Operational energy use
- **B7**: Operational water use

The product has a reference service life of 50 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement, or refurbishment throughout this period. Therefore, it has no impact at this stage.

C1-C4. End of Life Stage

This stage includes the next modules:

- C1: Deconstruction, demolition. The de-construction and/or dismantling of the product take part of the demolition of the entire building. In this case, the environmental impact is expected to be very small and can be neglected.
- C2: Transport to waste processing
- C3: Waste processing for reuse, recovery and/or recycling
- C4: Waste disposal, including physical pre-treatment and site management.

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Description of the scenarios and additional technical information for the end of life:

PARAMETER	VALUE/DESCRIPTION
Collection process specified by type	100% of mortar collected with mixed construction waste.
Recovery system specified by type	0% of waste. There is no recovery, recycling or reuse of the product once it was reached its end-of-life phase
Disposal specified by type	100 % to municipal landfill
Assumptions for scenario development (e.g. transportation)	Average truck trailer with 27t payload, diesel consumption 38L/100km; 50 km distance to landfill



D. Reuse/recovery/recycling potential

Module D declares the environmental benefits and burdens of reusable products, recyclable materials, or energy recovery. Module D considers:

- Outputs of secondary materials: packaging sent to recycling,
- Exported energy (electric or thermal): packaging sent to incineration with energy recovery.



Environmental performance

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors based on EF 3.1. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant.

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3)

Disclaimer 1: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the following indicators:

- Resource use, mineral and metals [kg Sb eq.]
- Resource use, energy carriers [MJ]
- Water deprivation potential [m³ world equiv.]
- Land use [Pt]
- Human toxicity (cancer) [CTUh]
- Human toxicity(noncancer) [CTUh]
- Ecotoxicity (freshwater [CTUe]

Disclaimer 2: The impact category lonizing radiation, human health [kBq U235 eq.] deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction material is also not measured by this indicator.

Disclaimer 3: The assumptions for the modules are in accordance with the project report (LCA study).

Results refer to a declared unit of 1 kg of webertherm KPS.

The following results corresponds to a single product manufactured in a single plant.



Environmental Impacts

		PRODUCT STAGE		RUCTION AGE			U	JSE S	STAG	E			BENEFITS AND LOADS BEYOND THE LIFE CYCLE			
Environmental indicators		A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Climate Change [kg CO ₂ eq.]	2,83E-01	2,42E-02	7,92E-03	х	Х	Χ	Х	Χ	Х	Х	0,00E+00	9,49E-03	0,00E+00	1,79E-02	-2,75E-03
(102	Climate Change (fossil) [kg CO ₂ eq.]	2,89E-01	2,42E-02	1,54E-03	Х	Х	Χ	X	X	X	Х	0,00E+00	9,49E-03	0,00E+00	1,79E-02	-2,76E-03
	Climate Change (biogenic) [kg CO ₂ eq.]	-6,38E-03	0,00E+00	6,38E-03	Х	X	Χ	X	X	X	X	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Climate Change (land use change) [kg CO ₂ eq.]	1,29E-04	8,70E-06	1,18E-06	Х	Х	Χ	Х	X	Х	Х	0,00E+00	3,41E-06	0,00E+00	4,65E-05	1,31E-05
	Ozone depletion [kg CFC-11 eq.]	1,98E-08	4,82E-10	1,27E-11	х	Х	Х	Х	Х	Х	Х	0,00E+00	1,89E-10	0,00E+00	3,73E-10	-4,17E-11
\$	Acidification terrestrial and freshwater [Mole of H+ eq.]	7,49E-04	5,04E-05	4,43E-06	х	Х	Х	Х	Х	Х	Х	0,00E+00	1,97E-05	0,00E+00	9,75E-05	-1,77E-05
	Eutrophication freshwater [kg P eq.]	5,26E-05	1,63E-06	2,37E-07	Х	Х	Χ	Х	Х	Х	Х	0,00E+00	6,39E-07	0,00E+00	1,47E-06	-3,27E-06
	Eutrophication marine [kg N eq.]	1,98E-04	1,21E-05	4,53E-06	Х	Х	Χ	Х	Х	X	X	0,00E+00	4,74E-06	0,00E+00	3,71E-05	-4,43E-06
	Eutrophication terrestrial [Mole of N eq.]	2,18E-03	1,31E-04	1,68E-05	Х	Х	Χ	Х	Х	Х	X	0,00E+00	5,12E-05	0,00E+00	4,02E-04	-4,33E-05
	Photochemical ozone formation - human health [kg NMVOC eq.]	7,34E-04	8,39E-05	5,57E-06	х	Х	Х	Х	Х	Х	Х	0,00E+00	3,29E-05	0,00E+00	1,41E-04	-1,50E-05
	Resource use, mineral and metals [kg Sb eq.] ¹	1,00E-06	8,07E-08	2,90E-09	Х	Х	Χ	Х	Х	Х	Х	0,00E+00	3,16E-08	0,00E+00	4,75E-08	-4,20E-09
	Resource use, energy carriers [MJ] ¹	2,45E+02	3,41E-01	1,14E-02	Х	Х	Х	Х	Χ	Х	Χ	0,00E+00	1,34E-01	0,00E+00	3,19E-01	-4,70E-02
()	Water deprivation potential [m³ world equiv.] ¹	1,31E-01	1,69E-03	3,21E-04	х	Х	Х	Х	Х	Х	Х	0,00E+00	6,64E-04	0,00E+00	1,28E-03	9,48E-04

¹ The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator



Additional (optional) environmental impact indicators – EN 15804+A2

		PRODUCT STAGE			USI	E STA	\GE				BENEFIT S AND LOADS BEYOND THE LIFE CYCLE					
En	vironmental indicators	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Particulate matter emissions [Disease incidence]	6,63E-09	1,79E-09	7,35E-11	х	X	Х	Х	Х	Х	Х	0,00E+00	6,99E-10	0,00E+00	9,59E-09	-1,56E-10
3	lonising radiation, human health [kBq U235 eq.]	2,41E-02	4,40E-04	5,65E-05	х	x	Х	Х	Х	Х	Χ	0,00E+00	1,72E-04	0,00E+00	2,41E-04	-4,26E-04
	Ecotoxicity (freshwater) [CTUe]	1,10E+00	4,54E-02	6,56E-03	х	X	Х	Х	Х	Х	Χ	0,00E+00	1,78E-02	0,00E+00	7,69E-02	-6,66E-03
2	Human toxicity, cancer effects [CTUh]	4,27E-11	4,07E-12	5,04E-13	х	x	Х	Х	Х	Х	Χ	0,00E+00	1,59E-12	0,00E+00	4,02E-12	-4,14E-13
P	Human toxicity, non-cancer effects [CTUh]	2,03E-09	2,16E-10	2,59E-11	х	X	Х	Х	Х	Х	Х	0,00E+00	8,45E-11	0,00E+00	1,45E-10	-1,42E-11
4	Land use related impacts / soil quality [Dimensionless]	1,19E+00	2,06E-01	9,66E-03	Х	Х	Х	Х	Х	Х	Х	0,00E+00	8,07E-02	0,00E+00	4,33E-01	-2,88E-01



Resources Use

PRODUCT STAGE CONSTRUCTION STAGE USE STAGE									BENEFIT S AND LOADS BEYOND THE LIFE CYCLE							
Resources Use indicators		A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
1*	Use of renewable primary energy (PERE) [MJ]	1,84E-01	5,97E-03	-3,08E-01	х	Х	Х	Х	Х	Х	Х	0,00E+00	2,34E-03	0,00E+00	3,96E-03	2,78E-03
*	Primary energy resources used as raw materials (PERM) [MJ]	1,00E-01	0,00E+00	-6,23E-02	х	Х	Х	Х	Х	Х	Х	0,00E+00	0,00E+00	0,00E+00	-3,78E-02	0,00E+00
*	Total use of renewable primary energy resources (PERT) [MJ]	2,84E-01	5,97E-03	-3,70E-01	х	Х	Х	Х	Х	Х	Х	0,00E+00	2,34E-03	0,00E+00	-3,38E-02	2,78E-03
O	Use of non-renewable primary energy (PENRE) [MJ]	2,19E+00	3,41E-01	-1,29E-02	х	Х	Х	X	Х	Х	Х	0,00E+00	1,34E-01	0,00E+00	3,20E-01	-4,76E-02
O	Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	3,31E-01	0,00E+00	-2,89E-02	х	Х	Х	Х	Х	Х	Х	0,00E+00	0,00E+00	0,00E+00	-3,02E-01	0,00E+00
O	Total use of non-renewable primary energy resources (PENRT) [MJ]	2,52E+00	3,41E-01	-4,18E-02	х	Х	Х	Х	Х	Х	Х	0,00E+00	1,34E-01	0,00E+00	1,77E-02	-4,76E-02
%	Use of secondary material (SM) [kg]	7,18E-04	1,58E-04	1,32E-05	х	Х	Х	Х	Х	X	Х	0,00E+00	6,20E-05	0,00E+00	1,13E-04	1,88E-03
*	Use of renewable secondary fuels (RSF) [MJ]	9,49E-04	2,00E-06	7,92E-08	х	х	X	Х	X	X	Х	0,00E+00	7,84E-07	0,00E+00	1,74E-06	-6,35E-08
U	Use of non-renewable secondary fuels (NRSF) [MJ]	0,00E+00	0,00E+00	0,00E+00	х	х	Х	Х	Х	Х	Х	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
0	Use of net fresh water (FW) [m³]	2,09E-03	4,65E-05	2,17E-04	х	Х	Х	Х	Х	Х	Х	0,00E+00	1,82E-05	0,00E+00	1,85E-04	1,34E-05



Waste Category & Output flows

		PRODUCT STAGE		CONSTRUCTION USE STAGE					END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE			
	Waste Category & Output Flows	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational	B7 Operational water	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Hazardous waste disposed (HWD) [kg]	7,25E-03	4,96E-04	8,72E-05	x	X	Х	X	X	X	Х	0,00E+00	1,94E-04	0,00E+00	4,72E-04	-1,22E-04
V	Non-hazardous waste disposed (NHWD) [kg]	2,14E-01	1,05E-02	4,59E-02	x	Х	х	Х	Х	Х	X	0,00E+00	4,10E-03	0,00E+00	9,45E-03	-1,33E-02
₩ B	Radioactive waste disposed (RWD) [kg]	4,19E-06	1,09E-07	1,43E-08	x	Х	х	Х	Х	Х	X	0,00E+00	4,28E-08	0,00E+00	5,88E-08	-1,09E-07
(a)	Components for re-use (CRU) [kg]	0,00E+00	0,00E+00	0,00E+00	x	Х	х	Х	Х	Х	X	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Materials for Recycling (MFR) [kg]	8,00E-04	0,00E+00	8,34E-03	x	Х	х	Х	Х	Х	Х	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
6	Material for Energy Recovery (MER) [kg]	0,00E+00	0,00E+00	5,93E-03	x	Х	х	Х	Х	Х	X	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
3	Exported electrical energy (EEE) [MJ]	0,00E+00	0,00E+00	1,40+E-02	х	Х	х	X	X	х	X	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
3>	Exported thermal energy (EET) [MJ]	0,00E+00	0,00E+00	1,98E-02	х	X	х	x	x	х	Х	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



Additional voluntary indicators from EN 15804

PRODUCT STAGE			CONSTRUCTION STAGE			US	E STA	GE			END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
Environmental indicators	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP-GHG [kg CO ₂ eq.] ²	2,89E-01	2,42E-02	1,54E-03	х	Х	Х	Х	X	Х	х	0,00E+00	9,49E-03	0,00E+00	1,79E-02	-2,75E-03

² The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.



Information on biogenic carbon content

		PRODUCT STAGE
Biog	enic Carbon Content in kg C	A1 / A2 / A3
P	Biogenic carbon content in product [kg]	-
9	Biogenic carbon content in packaging [kg]	0,0093

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.



Additional environmental information:

The energy used during the manufacturing (A3) is based on the following:

Parameter	Information
Energy data source and quality	Electricity, Slovakia, residual mix
Source	LCA study for country specific residual electricity mixes based on AIB 2023 and calculated by One Click LCA, OneClickLCA 2023
GHG-GWP CO ₂ eq.	0,45 kg of CO ₂ eq./kWh
Energy data source and quality	Heat production, natural gas, at industrial furnace >100kW (Reference product: heat, district or industrial, natural gas)
Source	ecoinvent 3.10.1
GHG-GWP CO ₂ eq.	0,0773
Energy data source and quality	Natural gas RU, Gas-mix-SK-2015
Source	LCA inventory for heat production from natural gas (OneClickLCA 2023)
GHG-GWP CO ₂ eq.	0,0138 kg of CO ₂ eq./MJ
Energy data source and quality	Market for propane, burned in building machine
Source	ecoinvent 3.10.1
GHG-GWP CO ₂ eq.	0,0944 kg of CO ₂ eq./MJ
Energy data source and quality	LPG for transport, including combustion
Source	IDEMAT
GHG-GWP CO ₂ eq.	3,36 kg of CO ₂ eq./kg

ABBREVIATIONS

EPD Environmental Product Declaration

eq. equivalents
FU Functional unit

g gram GJ Giga

GJ Giga Joules (as Net Calorific Value)

kg kilogram kWh kilowatt-hour

L liter

LCA Life Cycle Assessment
LCI Life Cycle Inventory Analysis
LCIA Life Cycle Impact Assessment

MJ Mega Joules (as Net Calorific Value)

PCR Product Category Rules

RSL Reference Service Life (in years)

ton metric ton

GWP Global warming potential



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