

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and
EN 15804:2012+A2:2019/AC:2021 for:

KAHI® masonry units



Version 01

Version date: 2026/04/27

Validity: 5 years

Validity date: 2031/04/26

The International EPD System, www.environdec.com

Programme operator: EPD International AB

EPD of multiple products, based on the average results of the product group.

Registration number: EPD-IES-0031537



Weber, Saint-Gobain

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see: www.environdec.com

GENERAL INFORMATION

Programme information

PROGRAMME:	The International EPD System
ADDRESS:	EPD International AB - Box 210 60 - SE-100 31 Stockholm – Sweden
WEBSITE:	www.environdec.com
E-MAIL:	support@environdec.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): PCR 2019:14 Construction Products, version 2.0.1

PCR review was conducted by: The Technical Committee of the International EPD System

See www.environdec.com for a list of members.

Chairs of the PCR review: Rob Rouwette (chair), Noa Meron (co-chair).

Verification

External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via

EPD verification through:

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

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

☒ EPD verification by individual verifier

Third party verifier: Mari Kirss, Meetripuu OÜ

Approved by: The International EPD System

Procedure for follow-up of data during EPD validity involves third part verifier: ☐ Yes ☒ No

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.

Information about EPD Owner

Address and contact information about the EPD owner: Saint-Gobain Finland Oy, Strömberginkuja 2 FI-00380 Helsinki, Finland

Description of the organization of the EPD owner: Saint-Gobain is a leading provider of sustainable building materials in Nordic, specializing in dry mortar solutions for floors, façades, and wet rooms. As part of the global Saint-Gobain Group, Saint-Gobain Finland Oy supports healthy construction systems and environmentally responsible building practices, offering innovative products tailored to both professional builders and DIY enthusiasts.

Management system-related certification: ISO 9001 (Certificate No.: Certificate No.: EUFI29-23001898-S1/EN), ISO 14001 (Certificate No.: Certificate No.: EUFI29-23001898-S2/EN)

LCA practitioner: Ida Leiviskä, Ida.Leiviska@ecobio.fi

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



Product information

Product name: KAHI® masonry units

Visual representation of the product:

UN CPC CODE: 37550 - Bricks, blocks and similar articles of cement, concrete or artificial stone

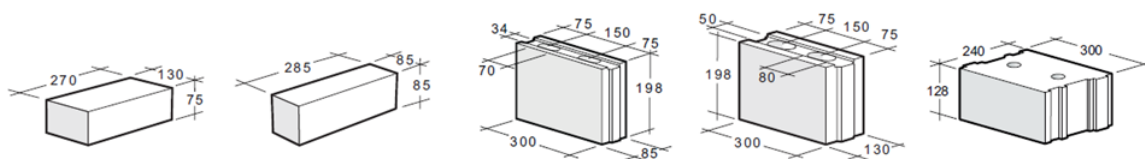
Manufacturing site: Saint-Gobain Finland Oy, weber Kiikala Oinasjärventie 200, 25390 Kiikala, Finland



Product description

The EPD covers KAHI® masonry units used in interior and exterior wall constructions (widths 75 - 240 mm). The products can be used both in load-bearing and in non-load-bearing structures. Additionally, they can be used in wall constructions that are subject to sound insulation and fire resistance requirements. The life cycle information of the group of products does not differ from one another, the fluctuation range of environmental impacts is not significant.

KAHI® masonry units consist of bricks and blocks. The units have a width of 75 mm, 85 mm, 130 mm, 198 mm or 240 mm. The heights of the units are 75 mm, 85 mm, 98 mm, 128 mm or 198 mm. The majority of the units contain voids for HVAC installations. Some of the units do not contain such installation voids. The most typical units are illustrated below.



For more information: www.fi.weber

All figures in this EPD refers to KAHI® masonry units.

Description	Value	Unit
Declared unit	1	kg
Density	1850*	kg/m ³
Lifespan	50	Years

*KAHI® masonry unit has a wider range for density in the CE-marking, 1400 – 2000 kg/m³, but the production has been based on density around 1850 kg/m³ for the last five years.

Technical data/physical characteristics:

Parameter	Value / Description	
Reaction to fire	A1	EN 771-2
Configuration	Group 1	EN 1996-1-1
Dimensional tolerances	Class T2	EN 771-2
Compressive strength 28 days	15-20 N/mm ²	EN 772-1
Water absorption	14%	EN 772-21
Water vapor permeability	μ 5/25	EN 1745
Thermal conductivity	0,75 W/mK (λ10, dry,mat)	EN 1745
Durability against freeze-thaw	F2	EN 772-18

Content declaration

Since the products are different size classes of the same structural solution, and the content declaration is calculated based on the average ratio of raw materials over 1 year production without separating product models, the mass ratios of the components remain relatively constant regardless of the size class.

Description of the main components and/or materials:

Product components	Weight (kg)	Post-consumer recycled material weight (%)	Biogenic material, kg C/kg of DU
Sand	80-90%	0%	0 kg C
Lime	5-8%	0%	0 kg C
Water	5-10%	0%	0 kg C
Sum	100% (1 kg)	0%	0 kg C
Packaging materials	Weight (kg)	Weight versus the product (%)	Biogenic material, kg C/kg of DU
Wood pallets, brick	0,00871	0,871%	0,00370
Wood pallets, EUR	0,0120	1,20%	0,00511
Packaging film	0,000749	0,0749%	0
Plastic straps	0,0000376	0,00376%	0
Mold pallets	0,0000756	0,00756%	0

Hazardous substances

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

LCA information

TYPE OF EPD	EPD of multiple products, based on the average results of the product group.
DECLARED UNIT	1 kg of KAHl® masonry unit
SYSTEM BOUNDARIES	Cradle to gate with options, module C1-C4, module D and optional modules. Optional modules are A4-A5.
ESTIMATED LIFESPAN	The estimated lifespan 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. Allocation has been avoided when possible and when not possible a mass allocation has been applied. The polluter pays and the modularity principles as well have been followed.
ALLOCATIONS	
DATA QUALITY ASSESSMENT	Data quality of primary and secondary data had been judged by its precision (measured, calculated, or estimated), completeness (e.g., unreported emissions), consistency (degree of uniformity of the methodology applied), and representativeness (geographical, technological, and temporal). Data quality assessment was carried out according to the requirements of EN 15941 and done using the data quality level and criteria schemes of UN Environment Global Guidance on LCA database development. Data quality assessment covered at least 80 % of the results of each of the declared core environmental impact indicators. Geographical, technical and time-related coverage was mostly assessed as good/very good.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope: Raw materials are acquired from Finland and Sweden. Packaging materials are acquired from Finland, Germany and Czech Republic. Manufacturing, distribution, construction and end-of-life occurs in Finland. Data is collected from 1 production site Kiikala located in Finland Data collected for the year 2025
BACKGROUND DATA SOURCE	Ecoinvent v.3.10 EF Package 3.1
SOFTWARE	SimaPro v.10.3.0.1

Data quality declaration

Data Collection	01/01/2025 to 31/12/2025
Sites used	Saint-Gobain Finland Oy, weber Kiikala Oinasjärventie 200, 25390 Kiikala, Finland
Geography	Raw materials acquired from Europe, mostly from Finland Manufactured in Finland Sold in Finland Use and disposal in Finland
Technology	The KAHL® masonry units manufacturing process consists of the following phases: grinding (one fraction) and screening of sand, dosing and mixing of the raw-materials, molding and steam hardening as well as packaging.
Averaging	Production weighted average covering 100% of production by the company
LCI/LCA database	Ecoinvent v.3.10 (Ecoinvent EN15804)
EPD used	None
Data Quality Scheme	EN 15804:2012+A2:2019, Annex E, Table E.1
Use of Fair data with more than 30 % of a core impact	None
Use of Poor relevant data	None
Use of Very Poor relevant data	None

The table declares the primary data used for the life cycle model, along with their contribution to the A1-A3 GWP-GHG.

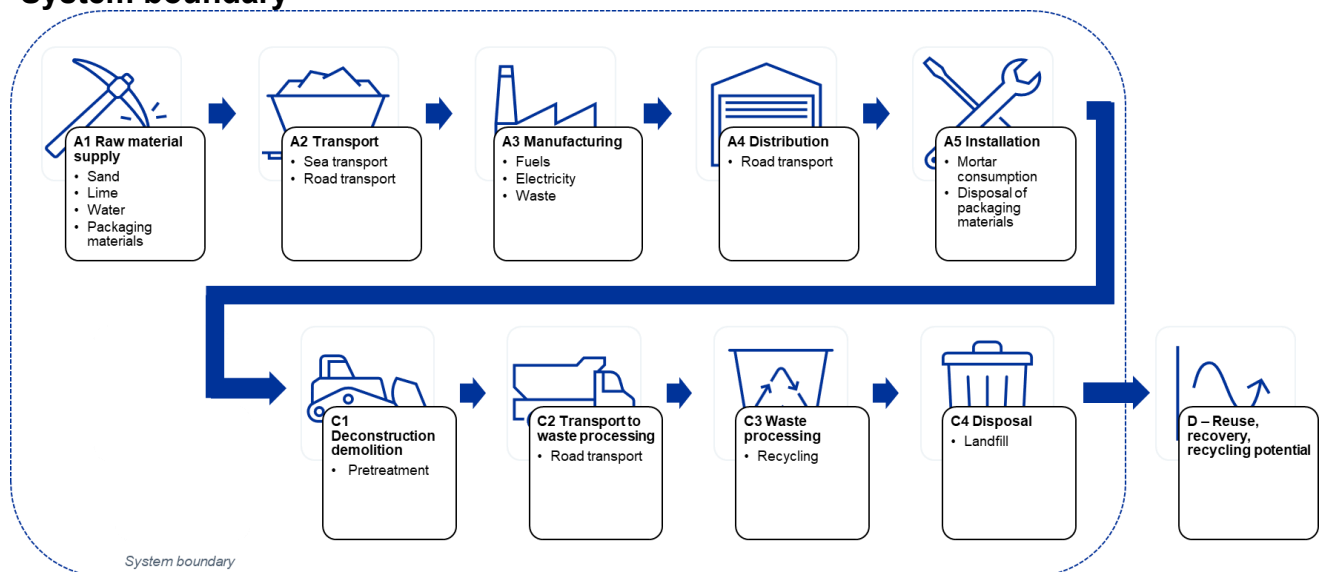
Process	Source type	Source	Reference year	Data category	A1-A3 GWP-GHG [%]
Manufacturing process					
Electricity Primary	Database	Ecoinvent 3.10 (Ecoinvent EN15804)	2024	Primary data	0,8%
Transportation (only if Primary data collected)					
A2_Transport_Primary	Database	Ecoinvent 3.10 (Ecoinvent EN15804)	2024	Primary data	5,1%
Total share of primary data					5,9%

Description of system boundaries

System boundaries (X=included. ND=module not declared)

	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				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	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	FI	FI	FI	-	-	-	-	-	-	-	FI	FI	FI	FI	FI
Share of primary data	5,9%																
Variation – products	0%																
Variation - sites	ND																

System boundary



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.

A2. Transport to the manufacturer

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

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.

Electricity information

The Saint-Gobain factory based in Kiikala, Finland uses electricity with Guarantee of Origin certificate (GO).

Hence, the electricity mix considered for the manufacturing of the studied product is modelled according to the electricity mix described in the Guarantee of Origin certificate. The amount of electricity purchased with GO covers 100% of the electricity consumption on the manufacturing site.

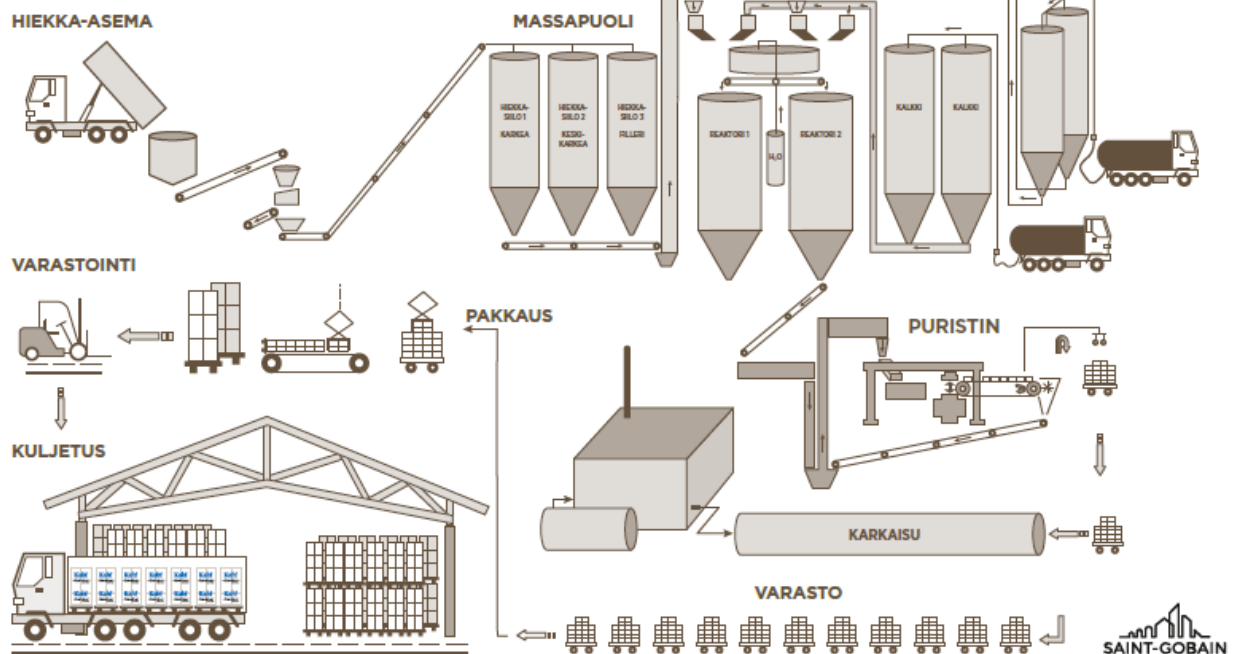
Parameter	VALUE / DESCRIPTION
Location	Finland
Share of electricity covered by Guarantee of Origin	100% of the energy consumption is covered by the GO
Energy sources for electricity	Share of energy sources Hydro 100%
Dataset version	Ecoinvent 3.10
Source	Guarantee of Origin certificate: Saint-Gobain Nordic business units certificate (Supplier of GO Å Entelios)
GWP-GHG CO ₂ eq.	0,0512 kg of CO ₂ eq./kWh

An EPD is valid for 5 years. Therefore, the GO will be prolonged continuously to be valid for the whole validity of the EPD. If not prolonged, the EPD will be updated.

Manufacturing process flow diagram



Kiikalan Kahi kalkkihiekkatiili -tehdas



Manufacturing includes screening of sand as well as dosing and mixing of raw materials. Molding, steam hardening and packaging are also included.

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 lorry 16–32 t payload, diesel, EURO5
Distance	100 km
Capacity utilisation (including empty returns)	100% of the capacity in mass 30% of empty returns
Bulk density of transported products*	1850 kg / m ³
Volume capacity utilisation factor	1 (by default)

A5. Installation in the building

This module includes: the installation of the product, the surplus of raw materials and management of packaging and product waste.

In this module was taken into consideration:

- Mortar used to install the product.
- Product packaging waste management
- Material loss during installation

Not taken into consideration:

- Additional accessories for installation
- Energy used to install the product (manual tools are used instead).

PARAMETER	VALUE / DESCRIPTION
Material consumption in installation	Mortar 25 kg/m ³ of product which equals to 0,014 kg of mortar/kg of product
Ancillary materials for installation	None
Water use	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	-
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	1% losses during installation
Output materials (specified by type) as results of waste processing at the building site e.g. of collection for recycling, for energy recovering, disposal	Product waste: 0,01 kg/ kg of product Packaging waste: PE: 0,000778 kg/ kg of product Wooden pallet: 0,0205 kg/ kg of product
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 an estimated lifespan 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 and use stage is excluded.

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. The energy considered for demolition is 5 kWh diesel / ton of product.
- **C2: Transport to waste processing**
- **C3: Waste processing for reuse, recovery and/or recycling**
- **C4: Waste disposal,** including physical pre-treatment and site management.

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

PARAMETER	VALUE/DESCRIPTION
Demolition process	5 kWh diesel / ton of product.
Transport to waste processing	Freight truck lorry 16–32 t payload, diesel, EURO5; 80 km transportation distance.
Recovery system specified by type	95% to recovery, recycling or reuse. 1,5 kWh diesel / ton of product.
Disposal specified by type	5% to municipal landfill. 1,6 kWh diesel / ton of product.

The end-of-life stage is generated according to the default values presented in IES PCR 2019:14 Construction products v.2.0.1. The default values include the energy consumption (in diesel) in demolition, recycling and disposal process as well as the transportation distance to waste processing.

D. Reuse/recovery/recycling potential

In the module D are declared the environmental benefits and loads from reusable products, recyclable materials, or energy recovery. Module D considers:

- Inputs of secondary materials: recycled raw materials for product and packaging (pre- and post-consumer),
- Outputs of secondary materials: product and/or packaging sent to recycling,
- Exported energy (electric or thermal): product and/or 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 Ionizing 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).

The following non-mandatory additional environmental indicators are not declared:

- Ecotoxicity freshwater [CTUe]
- Particulate Matter emissions [Disease incidence]
- Cancer human health effects [CTUh]
- Ionizing radiation - human health [kBq U235 eq.]
- Non-cancer human health effects [CTUh]
- Land Use [Pt].

Results refer to a declared unit of 1kg of KAHl® masonry unit.

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

Environmental Impacts

Environmental indicators		PRODUCT STAGE	CONSTRUCTION STAGE	USE STAGE								END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
		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 CO2 eq.]	1,20E-01	1,95E-02	4,52E-02	ND	ND	ND	ND	ND	ND	ND	2,22E-03	1,55E-02	6,35E-04	3,55E-05	-3,01E-06
	Climate Change (fossil) [kg CO2 eq.]	1,50E-01	1,94E-02	1,29E-02	ND	ND	ND	ND	ND	ND	ND	2,22E-03	1,55E-02	6,32E-04	3,55E-05	-3,01E-06
	Climate Change (biogenic) [kg CO2 eq.]	-3,21E-02	1,49E-04	3,23E-02	ND	ND	ND	ND	ND	ND	ND	4,10E-06	1,93E-07	2,75E-06	5,50E-08	3,09E-09
	Climate Change (land use change) [kg CO2 eq.]	2,48E-03	6,34E-06	1,40E-06	ND	ND	ND	ND	ND	ND	ND	1,91E-07	5,07E-06	5,44E-08	3,05E-09	-1,30E-09
	Ozone depletion [kg CFC-11 eq.]	1,52E-09	3,85E-10	2,73E-11	ND	ND	ND	ND	ND	ND	ND	3,36E-11	3,08E-10	9,58E-12	5,38E-13	-3,67E-14
	Acidification terrestrial and freshwater [Mole of H+ eq.]	3,62E-04	6,06E-05	2,08E-05	ND	ND	ND	ND	ND	ND	ND	7,49E-06	4,84E-05	2,13E-06	1,20E-07	-2,46E-08
	Eutrophication freshwater [kg P eq.]	1,19E-06	1,49E-07	9,31E-08	ND	ND	ND	ND	ND	ND	ND	7,72E-09	1,19E-07	2,20E-09	1,23E-10	-5,25E-11
	Eutrophication marine [kg N eq.]	1,14E-04	2,02E-05	6,90E-06	ND	ND	ND	ND	ND	ND	ND	3,04E-06	1,61E-05	8,67E-07	4,87E-08	-7,36E-09
	Eutrophication terrestrial [Mole of N eq.]	1,06E-03	2,22E-04	7,78E-05	ND	ND	ND	ND	ND	ND	ND	3,35E-05	1,78E-04	9,53E-06	5,35E-07	-1,01E-07
	Photochemical ozone formation - human health [kg NMVOC eq.]	4,21E-04	9,48E-05	2,14E-05	ND	ND	ND	ND	ND	ND	ND	1,19E-05	7,59E-05	3,38E-06	1,90E-07	-2,50E-08
	Resource use, mineral and metals [kg Sb eq.] ¹	1,06E-07	6,18E-08	7,80E-09	ND	ND	ND	ND	ND	ND	ND	7,65E-10	4,94E-08	2,18E-10	1,22E-11	-4,38E-11
	Resource use, energy carriers [MJ] ¹	1,01E+00	2,72E-01	2,97E-02	ND	ND	ND	ND	ND	ND	ND	2,87E-02	2,17E-01	8,19E-03	4,60E-04	-4,13E-05
	Water deprivation potential [m³ world equiv.] ¹	1,06E-01	1,51E-03	2,41E-03	ND	ND	ND	ND	ND	ND	ND	8,44E-05	1,21E-03	2,40E-05	1,35E-06	-1,37E-05

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

Resources Use

		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
Resources Use indicators ²		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
	Use of renewable primary energy (PERE) [MJ] ²	3,80E-01	4,61E-03	2,91E-01	ND	ND	ND	ND	ND	ND	ND	1,76E-04	3,69E-03	5,01E-05	2,81E-06	-1,44E-05
	Primary energy resources used as raw materials (PERM) [MJ] ²	2,83E-01	0,00E+00	-2,83E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Total use of renewable primary energy resources (PERT) [MJ] ²	6,62E-01	4,61E-03	8,13E-03	ND	ND	ND	ND	ND	ND	ND	1,76E-04	3,69E-03	5,01E-05	2,81E-06	-1,44E-05
	Use of non-renewable primary energy (PENRE) [MJ] ²	9,89E-01	2,72E-01	8,14E-02	ND	ND	ND	ND	ND	ND	ND	2,87E-02	2,17E-01	8,19E-03	4,60E-04	-4,13E-05
	Non-renewable primary energy resources used as raw materials (PENRM) [MJ] ²	5,17E-02	0,00E+00	-5,17E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Total use of non-renewable primary energy resources (PENRT) [MJ] ²	1,04E+00	2,72E-01	2,97E-02	ND	ND	ND	ND	ND	ND	ND	2,87E-02	2,17E-01	8,19E-03	4,60E-04	-4,13E-05
	Use of secondary material (SM) [kg]	1,47E-03	1,24E-04	2,22E-05	ND	ND	ND	ND	ND	ND	ND	1,19E-05	9,95E-05	3,40E-06	1,91E-07	-1,14E-07
	Use of renewable secondary fuels (RSF) [MJ]	1,72E-02	1,57E-06	2,83E-05	ND	ND	ND	ND	ND	ND	ND	3,12E-08	1,26E-06	8,89E-09	4,99E-10	-8,27E-10
	Use of non-renewable secondary fuels (NRSF) [MJ]	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Use of net fresh water (FW) [m3]	2,54E-03	3,73E-05	5,94E-05	ND	ND	ND	ND	ND	ND	ND	2,06E-06	2,98E-05	5,86E-07	3,29E-08	-3,28E-07

² From EPD International Construction Product PCR 2.0.1 (Annex 3). The option A was retained to calculate the primary energy use indicators. PERM and PENRM are balanced out in module A5 since they are originating from product packaging materials.

Waste Category & Output flows

		PRODUCT STAGE	CONSTRUCTION STAGE		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 energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Hazardous waste disposed (HWD) [kg]	7,04E-03	3,91E-04	2,33E-03	ND	ND	ND	ND	ND	ND	ND	3,21E-05	3,13E-04	9,15E-06	5,14E-07	-2,96E-07
	Non-hazardous waste disposed (NHWD) [kg]	1,19E-01	8,26E-03	4,03E-02	ND	ND	ND	ND	ND	ND	ND	4,39E-04	6,61E-03	1,25E-04	5,00E-02	-4,05E-06
	Radioactive waste disposed (RWD) [kg]	5,97E-07	8,66E-08	6,24E-08	ND	ND	ND	ND	ND	ND	ND	3,15E-09	6,93E-08	8,99E-10	5,05E-11	-1,19E-10
	Components for re-use (CRU) [kg]	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Materials for Recycling (MFR) [kg]	4,42E-04	2,04E-06	1,10E-04	ND	ND	ND	ND	ND	ND	ND	7,76E-08	1,63E-06	9,50E-01	1,24E-09	0,00E+00
	Material for Energy Recovery (MER) [kg]	2,04E-04	1,72E-08	2,64E-08	ND	ND	ND	ND	ND	ND	ND	3,94E-10	1,38E-08	1,12E-10	6,30E-12	0,00E+00
	Exported electrical energy (EEE) [MJ]	3,80E-04	4,62E-05	4,03E-05	ND	ND	ND	ND	ND	ND	ND	1,30E-06	3,70E-05	3,71E-07	2,08E-08	0,00E+00
	Exported thermal energy (EET) [MJ]	4,92E-04	6,70E-05	6,22E-05	ND	ND	ND	ND	ND	ND	ND	6,85E-07	5,36E-05	1,95E-07	1,10E-08	0,00E+00

Additional indicators from EN 15804

		PRODUCT STAGE	CONSTRUCTION STAGE	USE STAGE								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 CO2 eq.] ⁴	1,52E-01	1,94E-02	1,29E-02	ND	ND	ND	ND	ND	ND	ND	2,22E-03	1,55E-02	6,32E-04	3,55E-05	-3,01E-06

This EPD is an EPD of multiple products, based on the average results of the product group. The environmental performance is presented for the average KAHL® masonry unit. Since the product stage (modules A1-A3 = raw material supply, transport and manufacturing) is basically similar for all products within the product group and the results are calculated by averaging over 1 year production without separating product models, the variation of the declared environmental impact indicator results for modules A-C in total is <10% within the product group.

⁴ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

Information on biogenic carbon content

		PRODUCT STAGE
Biogenic Carbon Content in kg C		A1 / A2 / A3
	Biogenic carbon content in product [kg]	0
	Biogenic carbon content in packaging [kg]	8,81E-03

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

Environmental Impacts

If any of the declared scenarios is a mix of end-of life alternatives, also the corresponding 100% scenarios shall be declared. The following section shows the result for modules C1-C4 and D with 100% landfill and 100% recycling scenarios.

Environmental indicators

		100% landfill					100% recycling				
		END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING	END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Climate Change (total) [kg CO ₂ eq.] ^(a)	2,22E-03	1,55E-02	0,00E+00	7,10E-04	3,78E-06	2,22E-03	1,55E-02	6,66E-04	0,00E+00	-3,29E-06
	Climate Change (fossil) [kg CO ₂ eq.]	2,22E-03	1,55E-02	0,00E+00	7,10E-04	3,65E-06	2,22E-03	1,55E-02	6,65E-04	0,00E+00	-3,18E-06
	Climate Change (biogenic) [kg CO ₂ eq.]	1,93E-07	2,75E-06	0,00E+00	7,59E-08	1,27E-07	1,93E-07	2,75E-06	7,12E-08	0,00E+00	-1,10E-07
	Climate Change (land use change) [kg CO ₂ eq.]	1,91E-07	5,07E-06	0,00E+00	6,11E-08	2,75E-09	1,91E-07	5,07E-06	5,73E-08	0,00E+00	-1,37E-09
	Ozone depletion [kg CFC-11 eq.]	3,36E-11	3,08E-10	0,00E+00	1,08E-11	4,66E-14	3,36E-11	3,08E-10	1,01E-11	0,00E+00	-3,87E-14
	Acidification terrestrial and freshwater [Mole of H ⁺ eq.]	7,49E-06	4,84E-05	0,00E+00	2,40E-06	2,84E-08	7,49E-06	4,84E-05	2,25E-06	0,00E+00	-2,60E-08
	Eutrophication freshwater [kg P eq.]	7,72E-09	1,19E-07	0,00E+00	2,47E-09	9,85E-11	7,72E-09	1,19E-07	2,32E-09	0,00E+00	-5,54E-11
	Eutrophication marine [kg N eq.]	3,04E-06	1,61E-05	0,00E+00	9,74E-07	8,09E-09	3,04E-06	1,61E-05	9,13E-07	0,00E+00	-7,76E-09
	Eutrophication terrestrial [Mole of N eq.]	3,35E-05	1,78E-04	0,00E+00	1,07E-05	1,10E-07	3,35E-05	1,78E-04	1,00E-05	0,00E+00	-1,07E-07
	Photochemical ozone formation - human health [kg NMVOC eq.]	1,19E-05	7,59E-05	0,00E+00	3,80E-06	2,77E-08	1,19E-05	7,59E-05	3,56E-06	0,00E+00	-2,64E-08
	Resource use, mineral and metals [kg Sb eq.] ⁵	7,65E-10	4,94E-08	0,00E+00	2,45E-10	4,73E-11	7,65E-10	4,94E-08	2,30E-10	0,00E+00	-4,62E-11
	Resource use, energy carriers [MJ] ¹	2,87E-02	2,17E-01	0,00E+00	9,19E-03	5,44E-05	2,87E-02	2,17E-01	8,62E-03	0,00E+00	-4,36E-05
	Water deprivation potential [m ³ world equiv.] ¹	8,44E-05	1,21E-03	0,00E+00	2,70E-05	1,48E-05	8,44E-05	1,21E-03	2,53E-05	0,00E+00	-1,45E-05

⁵ Disclaimer 2: 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

^(a) The total global warming potential (GWP-total) is the sum of GWP fossil. GWP biogenic and GWP land use change

Resources Use

Resources Use indicators

		100% landfill					100% recycling				
		END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING	END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
	Use of renewable primary energy (PERE) [MJ]	1,76E-04	3,69E-03	0,00E+00	5,63E-05	1,77E-05	1,76E-04	3,69E-03	5,27E-05	0,00E+00	-1,52E-05
	Primary energy resources used as raw materials (PERM) [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
	Total use of renewable primary energy resources (PERT) [MJ]	1,76E-04	3,69E-03	0,00E+00	5,63E-05	1,77E-05	1,76E-04	3,69E-03	5,27E-05	0,00E+00	-1,52E-05
	Use of non-renewable primary energy (PENRE) [MJ]	2,87E-02	2,17E-01	0,00E+00	9,19E-03	5,44E-05	2,87E-02	2,17E-01	8,62E-03	0,00E+00	-4,36E-05
	Non-renewable primary energy resources used as raw materials (PENRM) [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
	Total use of non-renewable primary energy resources (PENRT) [MJ]	2,87E-02	2,17E-01	0,00E+00	9,19E-03	5,44E-05	2,87E-02	2,17E-01	8,62E-03	0,00E+00	-4,36E-05
	Input of secondary material (SM) [kg]	1,19E-05	9,95E-05	0,00E+00	3,82E-06	1,27E-07	1,19E-05	9,95E-05	3,58E-06	0,00E+00	-1,21E-07
	Use of renewable secondary fuels (RSF) [MJ]	3,12E-08	1,26E-06	0,00E+00	9,98E-09	8,80E-10	3,12E-08	1,26E-06	9,36E-09	0,00E+00	-8,72E-10
	Use of non-renewable secondary fuels (NRSF) [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
	Use of net fresh water (FW) [m³]	2,06E-06	2,98E-05	0,00E+00	6,58E-07	3,55E-07	2,06E-06	2,98E-05	6,17E-07	0,00E+00	-3,46E-07

* From EPD International Construction Product PCR 2.0.1 (Annex 3). The option A was retained to calculate the primary energy use indicators.

Waste Category & Output flows

Waste Category & Output Flows

		100% landfill					100% recycling				
		END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING	END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Hazardous waste disposed (HWD) [kg]	3,21E-05	3,13E-04	0,00E+00	1,03E-05	3,41E-07	3,21E-05	3,13E-04	9,63E-06	0,00E+00	-3,12E-07
	Non-hazardous waste disposed (NHWD) [kg]	4,39E-04	6,61E-03	0,00E+00	1,00E+00	6,27E-06	4,39E-04	6,61E-03	1,32E-04	0,00E+00	-4,28E-06
	Radioactive waste disposed (RWD) [kg]	3,15E-09	6,93E-08	0,00E+00	1,01E-09	2,00E-10	3,15E-09	6,93E-08	9,46E-10	0,00E+00	-1,25E-10
	Components for re-use (CRU) [kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Materials for Recycling (MFR) [kg]	7,76E-08	1,63E-06	0,00E+00	2,48E-08	0,00E+00	7,76E-08	1,63E-06	1,00E+00	0,00E+00	0,00E+00
	Material for Energy Recovery (MER) [kg]	3,94E-10	1,38E-08	0,00E+00	1,26E-10	0,00E+00	3,94E-10	1,38E-08	1,18E-10	0,00E+00	0,00E+00
	Exported electrical energy (EEE) [MJ]	1,30E-06	3,70E-05	0,00E+00	4,16E-07	0,00E+00	1,30E-06	3,70E-05	3,90E-07	0,00E+00	0,00E+00
	Exported thermal energy (EET) [MJ]	6,85E-07	5,36E-05	0,00E+00	2,19E-07	0,00E+00	6,85E-07	5,36E-05	2,06E-07	0,00E+00	0,00E+00

Additional indicators from EN 15804

Environmental indicators

		100% landfill					100% recycling				
		END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING	END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	GWP-GHG [kg CO2 eq.] ⁶	2,22E-03	1,55E-02	0,00E+00	7,12E-04	3,68E-06	2,22E-03	1,55E-02	6,67E-04	0,00E+00	-3,21E-06

⁶ 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.

Version history

Original version of the EPD, 2026-04-27

Abbreviations

DU	Declared unit
EPD	Environmental Product Declaration
eq.	equivalents
FU	Functional unit
g	gram
GJ	Giga Joules (as Net Calorific Value)
GO	Guaranties of origin
GWP	Global warming potential
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

References

1. ISO 14040:2006 Environmental Management-Life Cycle Assessment-Principles and framework.
2. ISO 14044:2006 Environmental Management-Life Cycle Assessment-Requirements and guidelines.
3. ISO 14025:2006 Environmental labels and Declarations-Type III Environmental Declarations Principles and procedures.
4. EN 15804:2012+A2:2019/AC:2021- Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
5. EPD International. General Program Instructions (GPI) for the International EPD® System (version 5.0.1) <http://www.environdec.com/>.
6. The International EPD System PCR 2019:14 Construction products and Construction services. Version 2.0.1
7. EN 15941 Sustainability of construction works - Data quality for environmental assessment of products and construction work - Selection and use of data
8. LCA report - KAHI® masonry units, 2026