



ENVIRONMENTAL PRODUCT DECLARATION

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

**weber ESL P LUJA C40/50-4 Frost
Mortar for concrete element joints**



INTERNATIONAL EPD SYSTEM

The International EPD® System
Programme operator: EPD International AB
Registration number: EPD-IES-0027159:001



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Validity date: 2030/12/10

**Scope of the EPD®: Finland &
Baltics**



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

GENERAL INFORMATION

Programme information

PROGRAMME:	The International EPD® System
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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: Dr. Andrew Norton, Renuables Ltd. E-mail: a.norton@renuables.co.uk

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

Contact: Anne Kaiser (anne.kaiser@saint-gobain.com)

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

LCA practitioner: Malin Dalborg, (malin.dalborg@saint-gobain.com) Norra Malmvägen 76, 191 62
Sollentuna, Sweden

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

Product information

Product name: weber ESL P LUJA C40/50-4 Frost Mortar for concrete element joints

Visual representation of the product:

UN CPC CODE: 37510 Non-refractory mortars and concretes

Manufacturing site: Kehätie 1566 A FI-03250 Ojakkala, Finland

GTIN number:

GTIN 1000 kg BB PP-bag: 6415910033316



Product description

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 kg of weber ESL P LUJA C40/50-4 Frost Mortar for concrete element joints. This EPD applies for one specific product produced in one single plant, delivered in 1000 kg BB PP-bag. The product is non-sagging mortar designed especially for vertical and horizontal joints of concrete elements according to EN 1504-4, applied using a pump. It is also suitable for casting the top and bottom joints of wall elements, for example, and for filling cracks and other holes and grooves without the need of using molds. The product is certified as special mortar according to guidelines given by The Concrete Association of Finland (BY).

All technical characteristics and properties for the product can be found on the website:
<https://www.fi.weber/betonituotteet-ja-ratkaisut/juotos-ja-saumausbetonit/weber-esl-p-luja-c4050-4-pakkaselementtisaumalaasti>

Technical data/physical characteristics:

Parameter	Value / Description	
Recommended water content	13-14 L/100 kg dry mix	-
Compressive strength class	C40/50-4 when pumped	EN 206
Adhesion strength 28 days	> 4.0 MPa (Flexural bond strength) > 15 MPa (Slant shear strength)	EN 12636 EN 12615
Compressive strength 28 days	Approx. 45 MPa (-5 °C) Approx. 35 MPa (-15 °C)	EN 12190
Unstrained shrinkage 28 days	0.6 mm/m	EN 12617-4
Fire class	A1	EN 13501-1
Modulus of elasticity	> 20 GPa	EN 13412
Density	Approx. 2100 kg/m ³	-
Contents of chlorides	< 0.05%	SFS-EN 1015-17
Air content	6-10%	-

Content declaration

Description of the main components and/or materials:

Product components	Weight (%)	Post-consumer recycled material weight (%)	Biogenic material, kg C/DU
Binder	30 – 50 %	0%	0 kg
Minerals	50 – 70 %	0%	0 kg
Additives	0 – 5 %	0%	0,00011kg
Sum	100%	0%	0,00011 kg

Packaging materials	Weight (kg)	Weight versus the product (%)	Biogenic material, kg C/DU
PP big bag	0,0014 kg	0,14 %	0 kg

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, in product or packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

LCA information

TYPE OF EPD	Cradle to gate with options, module C1-C4, module D and optional modules (A4–A5 + B1–B7).
DECLARED UNIT	1 kg of weber ESL P LUJA C40/50-4 Frost Mortar for concrete element joints
SYSTEM BOUNDARIES	Cradle to gate with options, module C1-C4, module D and optional modules (A4–A5 + B1–B7).
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	<p>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.</p> <p>Flows related to human activities such as employee transport are excluded.</p> <p>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.</p>
ALLOCATIONS	<p>Allocation has been avoided when possible and when not possible a mass allocation has been applied.</p> <p>The polluter pays and the modularity principles as well have been followed.</p>
DATA QUALITY ASSESSMENT	<p>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).</p> <p>Scope: Finland*</p>
GEOGRAPHICAL COVERAGE AND TIME PERIOD	<p>Data is collected from one production site, Ojakkala, located in Finland. Data collected for the year 2024, except 2025 for raw material supply.</p> <p>*Additional result for Baltics (Estonia, Latvia, Lithuania)</p>
BACKGROUND DATA SOURCE	The databases Sphera CUP2024.2 and ecoinvent v.3.10 EF Package 3.1
SOFTWARE	Sphera LCA for experts (GaBi) 10.9

Data quality declaration

Data quality information according to EN 15941	
Data Collection	2024 plant data, 2025 raw material data
Site used	Ojakkala
Geography	Finland
Technology	Mortars are produced by mixing cement, others minerals and some additives
Averaging	Production weighted average covering 100 % of production by the company
LCI/LCA database	Sphera CUP2024.2 and ecoinvent v.3.10
EPD used	The supply of cement was modelled using supplier EPD
Data Quality Scheme	EN 15804:2012+A2:2019, Annex E, Table E.2
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.

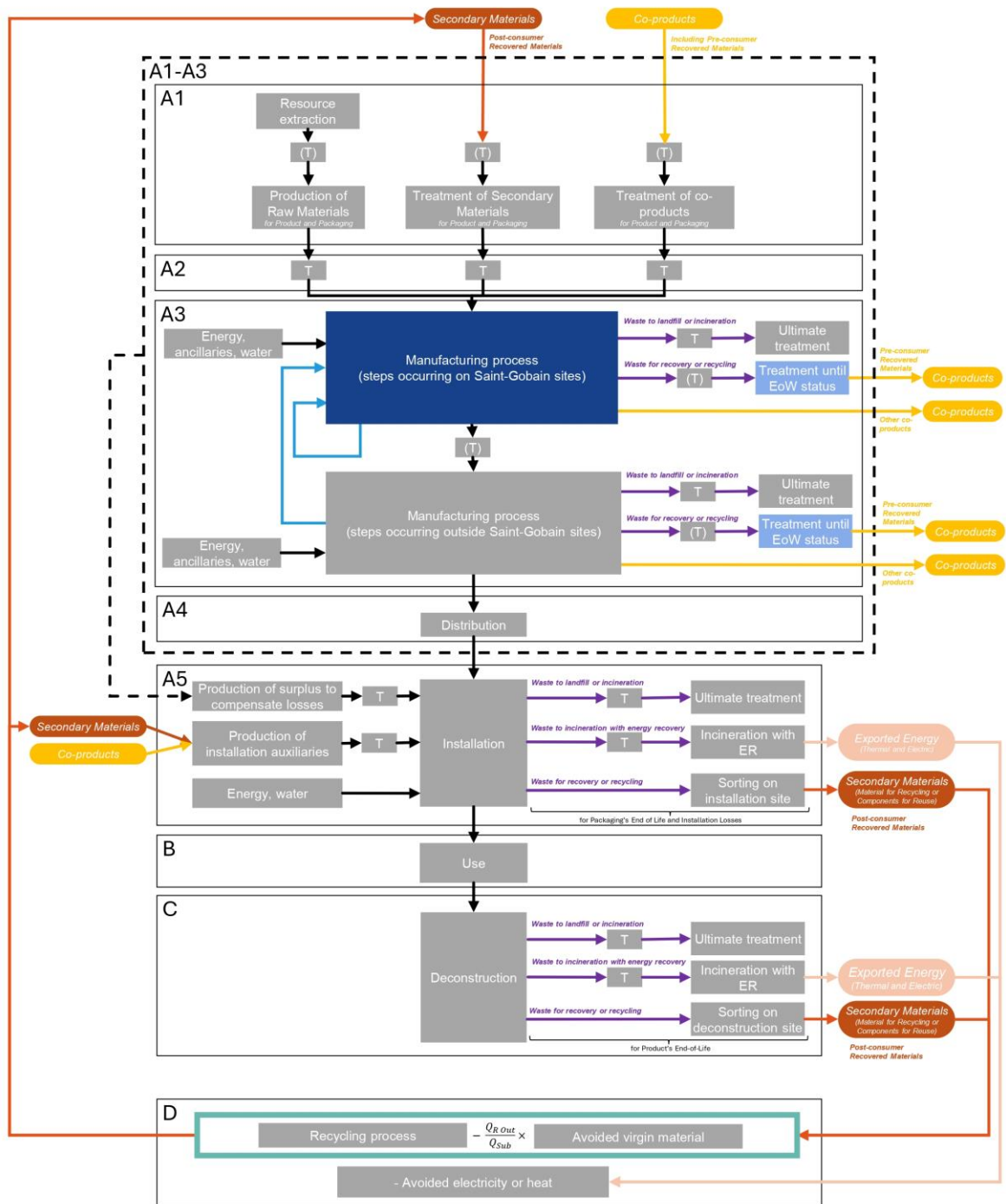
Process	Source type	Source	Reference year	Data category	A1-A3 GWP-GHG [kg CO ₂ eq.]
Raw Material from EPD					
CEM II	EPD	EPD International	2024	Primary/ Secondary data	67,9%
Manufacturing process					
Energy specific	Database	Sphera 2024.2	<5 years old	Primary data	0,1%
Transportation					
A2_Transport_Specific	Database	Sphera 2024.2 /ecoinvent 3.10	<5 years old	Primary data	2,4%
Total share of primary data					70,4%

Description of system boundaries

System boundaries (X=included. MND=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	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	GLO	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI

Process flow diagram



caption

Type of flows		Location of life Cycle Step	
	Internal recycling (not leaving the system)		Saint-Gobain site
	Recovered Material (recycled or reused). Treated with waste allocation(*)		Saint-Gobain site or External
	Exported Energy		External/Other
	Co-product. Treated with co-product allocation(*)		Transport
	Waste (*)		
	Other		

(*)As defined by EN15804+A2

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.

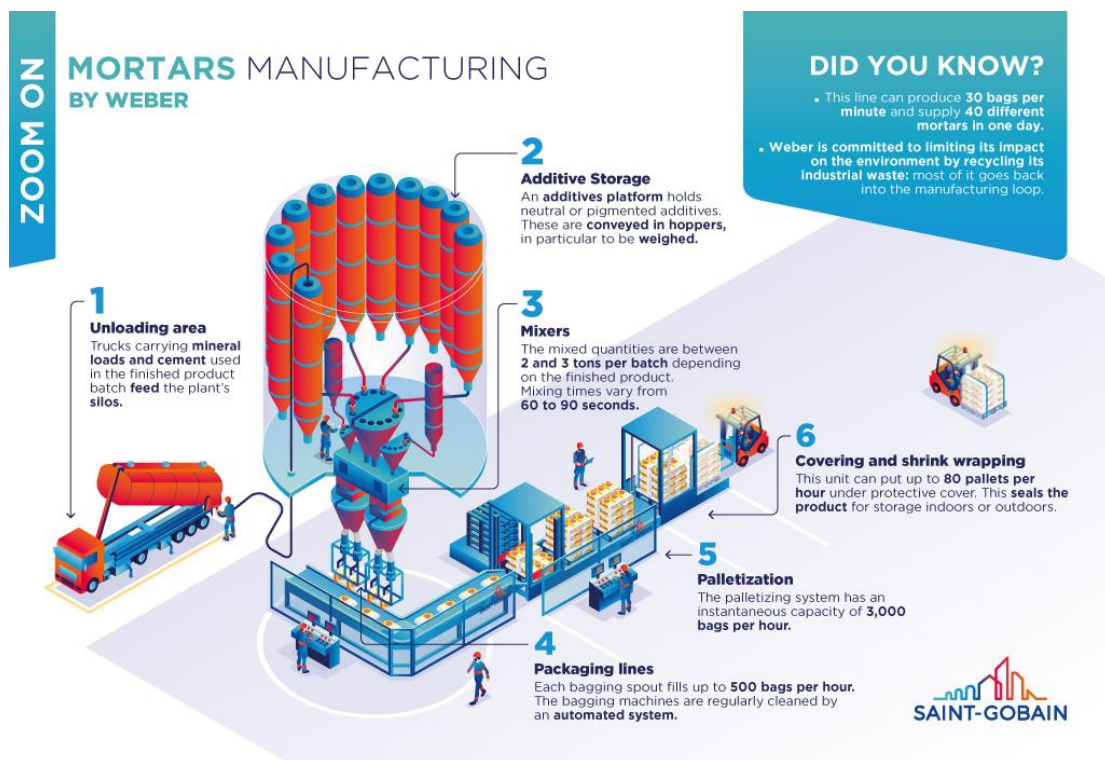
A2. Transport to the manufacturer

This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road, boat and/or train 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.

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, maximum load weight of 27 t and consumption of 0,38 liters diesel per km.
Distance	Real 24 t payload 110 km by truck Finland*
Capacity utilisation (including empty returns)	100% of the capacity in mass 30% of empty returns
Bulk density of transported products	2100 kg/m ³
Volume capacity utilisation factor	1 (by default)

*Result for transport to Baltics (Estonia, Latvia, Lithuania), see additional information

A5. Installation in the building

This module includes: the installation of the product, the surplus of raw materials and packaging (cradle to gate) to compensate for the loss of product during the installation, the transport and management of packaging and product waste.

In this module the following was taken into consideration:

- Energy used in the equipment to prepare the product.

Not taken into consideration:

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

PARAMETER	VALUE / DESCRIPTION
Ancillary materials for installation (specified by materials)	None
Water use	0,14 l/kg of product
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	0,02196 MJ/kg electricity (mixing & pumping)
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	5% losses for product 100% losses for packaging
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: 100% to landfill Packaging: 53% to recycling, 41% to landfill, 6% to recovery to energy
Use of pallet	7 times before end of life
Distance to waste treatment facilities	Landfill and recycling: 80 km Energy recovery: 130 km
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: Carbonation**
 - No carbonation is considered for this product
- **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. The energy considered for demolition is 0,05 MJ/kg (diesel)
- **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
Collection process specified by type	1 kg mortar + part of water from A5 collected with mixed construction waste.
Recovery system specified by type	None
Disposal specified by type	100% landfill
Assumptions for scenario development (e.g. transportation)	The waste will be transported by truck with 27 t payload, using diesel as a fuel consuming 0.38 liters per km Transport distance to landfill: 80 km

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 1 kg of weber weber ESL P LUJA C40/50-4 Frost Mortar for concrete element joints.

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 CO ₂ eq.]	2,98E-01	8,04E-03	1,91E-02	0	0	0	0	0	0	0	2,01E-03	7,63E-03	0	1,88E-02	-6,99E-04
	Climate Change (fossil) [kg CO ₂ eq.]	2,98E-01	7,89E-03	1,90E-02	0	0	0	0	0	0	0	2,01E-03	7,48E-03	0	1,81E-02	-8,97E-04
	Climate Change (biogenic) [kg CO ₂ eq.]	-4,63E-05	2,18E-05	4,47E-05	0	0	0	0	0	0	0	1,72E-06	2,13E-05	0	5,93E-04	1,98E-04
	Climate Change (land use change) [kg CO ₂ eq.]	1,77E-04	1,31E-04	2,68E-05	0	0	0	0	0	0	0	7,32E-08	1,24E-04	0	1,09E-04	1,75E-07
	Ozone depletion [kg CFC-11 eq.]	6,80E-09	7,83E-16	3,44E-10	0	0	0	0	0	0	0	1,71E-16	1,09E-15	0	4,89E-14	-7,64E-11
	Acidification terrestrial and freshwater [Mole of H ⁺ eq.]	1,04E-03	8,71E-06	6,34E-05	0	0	0	0	0	0	0	4,60E-06	9,94E-06	0	1,29E-04	-7,52E-07
	Eutrophication freshwater [kg P eq.]	3,07E-06	3,32E-08	1,73E-07	0	0	0	0	0	0	0	3,83E-10	3,16E-08	0	4,12E-08	4,09E-09
	Eutrophication marine [kg N eq.]	4,95E-04	2,87E-06	2,78E-05	0	0	0	0	0	0	0	1,85E-06	3,58E-06	0	3,31E-05	8,61E-08
	Eutrophication terrestrial [Mole of N eq.]	3,79E-03	3,50E-05	2,22E-04	0	0	0	0	0	0	0	2,03E-05	4,26E-05	0	3,65E-04	2,11E-07
	Photochemical ozone formation - human health [kg NMVOC eq.]	8,81E-04	8,14E-06	5,31E-05	0	0	0	0	0	0	0	5,46E-06	9,86E-06	0	1,01E-04	-6,26E-06
	Resource use, mineral and metals [kg Sb eq.] ¹	1,02E-06	6,62E-10	5,26E-08	0	0	0	0	0	0	0	4,84E-11	6,45E-10	0	1,17E-09	-1,15E-08
	Resource use, energy carriers [MJ] ¹	1,76E+00	1,01E-01	1,51E-01	0	0	0	0	0	0	0	2,60E-02	9,75E-02	0	2,39E-01	-4,55E-02
	Water deprivation potential [m ³ world equiv.] ¹	2,83E+00	1,16E-04	1,49E-01	0	0	0	0	0	0	0	5,46E-06	1,15E-04	0	2,07E-03	-2,48E-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

Resources Use

Resources Use 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
 Use of renewable primary energy (PERE) [MJ] ²	2,09E-01	8,58E-03	4,11E-02	0	0	0	0	0	0	0	1,30E-04	8,40E-03	0	4,17E-02	-1,05E-03
 Primary energy resources used as raw materials (PERM) [MJ] ²	1,33E-01	0	6,60E-03	0	0	0	0	0	0	0	0	0	0	0	0
 Total use of renewable primary energy resources (PERT) [MJ] ²	3,42E-01	8,58E-03	4,77E-02	0	0	0	0	0	0	0	1,30E-04	8,40E-03	0	4,17E-02	-1,05E-03
 Use of non-renewable primary energy (PENRE) [MJ] ²	1,07E+00	1,01E-01	1,18E-01	0	0	0	0	0	0	0	2,60E-02	9,75E-02	0	2,39E-01	-4,55E-02
 Non-renewable primary energy resources used as raw materials (PENRM) [MJ] ²	6,95E-01	0	-1,05E-03	0	0	0	0	0	0	0	0	0	0	0	0
 Total use of non-renewable primary energy resources (PENRT) [MJ] ²	1,77E+00	1,01E-01	1,17E-01	0	0	0	0	0	0	0	2,60E-02	9,75E-02	0	2,39E-01	-4,55E-02
 Use of secondary material (SM) [kg]	9,14E-02	0	4,57E-03	0	0	0	0	0	0	0	0	0	0	0	0
 Use of renewable secondary fuels (RSF) [MJ]	1,28E-01	0	6,38E-03	0	0	0	0	0	0	0	0	0	0	0	0
 Use of non-renewable secondary fuels (NRSF) [MJ]	7,59E-01	0	3,80E-02	0	0	0	0	0	0	0	0	0	0	0	0
 Use of net fresh water (FW) [m ³]	8,34E-04	9,63E-06	2,32E-04	0	0	0	0	0	0	0	1,95E-07	9,36E-06	0	6,33E-05	-5,78E-06



² From EPD International Construction Product PCR 1.3.2 (Annex 3). The option B was retained to calculate the primary energy use indicators.

Additional voluntary 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 CO ₂ eq.] ³	2,98E-01	7,98E-03	1,90E-02	0	0	0	0	0	0	0	1,99E-03	7,57E-03	0	1,82E-02	-6,71E-04








³ 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
Biogenic Carbon Content in kg C		A1 / A2 / A3
	Biogenic carbon content in product [kg]	1,11E-04
	Biogenic carbon content in packaging [kg]	0






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

Environmental Impacts

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.]	2,01E-03	7,63E-03	0	1,88E-02	-6,99E-04	2,01E-03	7,61E-03	3,90E-03	0	-3,12E-03
	Climate Change (fossil) [kg CO ₂ eq.]	2,01E-03	7,48E-03	0	1,81E-02	-8,97E-04	2,01E-03	7,47E-03	3,35E-03	0	-3,28E-03
	Climate Change (biogenic) [kg CO ₂ eq.]	1,72E-06	2,13E-05	0	5,93E-04	1,98E-04	1,72E-06	2,06E-05	5,06E-04	0	1,87E-04
	Climate Change (land use change) [kg CO ₂ eq.]	7,32E-08	1,24E-04	0	1,09E-04	1,75E-07	7,32E-08	1,24E-04	4,52E-05	0	-1,91E-05
	Ozone depletion [kg CFC-11 eq.]	1,71E-16	1,09E-15	0	4,89E-14	-7,64E-11	1,71E-16	7,41E-16	6,04E-15	0	-7,65E-11
	Acidification terrestrial and freshwater [Mole of H ⁺ eq.]	4,60E-06	9,94E-06	0	1,29E-04	-7,52E-07	4,60E-06	8,39E-06	1,67E-05	0	-1,30E-05
	Eutrophication freshwater [kg P eq.]	3,83E-10	3,16E-08	0	4,12E-08	4,09E-09	3,83E-10	3,14E-08	1,30E-08	0	-5,43E-09
	Eutrophication marine [kg N eq.]	1,85E-06	3,58E-06	0	3,31E-05	8,61E-08	1,85E-06	2,79E-06	7,71E-06	0	-4,31E-06
	Eutrophication terrestrial [Mole of N eq.]	2,03E-05	4,26E-05	0	3,65E-04	2,11E-07	2,03E-05	3,40E-05	8,52E-05	0	-4,83E-05
	Photochemical ozone formation - human health [kg NMVOC eq.]	5,46E-06	9,86E-06	0	1,01E-04	-6,26E-06	5,46E-06	7,84E-06	2,13E-05	0	-1,82E-05
	Resource use, mineral and metals [kg Sb eq.]	4,84E-11	6,45E-10	0	1,17E-09	-1,15E-08	4,84E-11	6,26E-10	3,51E-09	0	-1,17E-08
	Resource use, energy carriers [MJ]	2,60E-02	9,75E-02	0	2,39E-01	-4,55E-02	2,60E-02	9,60E-02	6,26E-02	0	-8,17E-02
	Water deprivation potential [m ³ world equiv.]	5,46E-06	1,15E-04	0	2,07E-03	-2,48E-04	5,46E-06	1,10E-04	6,40E-04	0	-5,36E-04






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	D Reuse, recovery, recycling	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
 Use of renewable primary energy (PERE) [MJ]	1,30E-04	8,12E-03	0	4,17E-02	-1,05E-03	1,30E-04	8,12E-03	6,68E-03	0	-1,44E-02
 Primary energy resources used as raw materials (PERM) [MJ] *	0	0	0	0	0	0	0	0	0	0
 Total use of renewable primary energy resources (PERT) [MJ]	1,30E-04	8,12E-03	0	4,17E-02	-1,05E-03	1,30E-04	8,12E-03	6,68E-03	0	-1,44E-02
 Use of non-renewable primary energy (PENRE) [MJ]	2,60E-02	9,60E-02	0	2,39E-01	-4,55E-02	2,60E-02	9,60E-02	6,26E-02	0	-8,17E-02
 Non-renewable primary energy resources used as raw materials (PENRM) [MJ] *	0	0	0	0	0	0	0	-1,60E-02	0	0
 Total use of non-renewable primary energy resources (PENRT) [MJ]	2,60E-02	9,60E-02	0	2,39E-01	-4,55E-02	2,60E-02	9,60E-02	4,66E-02	0	-8,17E-02
 Input of secondary material (SM) [kg]	0	0	0	0	0	0	0	0	0	0
 Use of renewable secondary fuels (RSF) [MJ]	0	0	0	0	0	0	0	0	0	0
 Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0	0	0	0	0	0	0	0
 Use of net fresh water (FW) [m ³]	1,95E-07	9,11E-06	0	6,33E-05	-5,78E-06	1,95E-07	9,11E-06	1,87E-05	0	-1,75E-05

* For this study, both the product and its packaging are reported in the indicators "Use of renewable primary energy resources used as raw materials" ("PERM") and "Use of non-renewable primary energy resources used as raw materials" ("PENRM"). PERM and PENRM are reported as negative values when materials are recycled or recovered, but not when landfilled.

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]	8,03E-13	3,11E-12	0	5,95E-11	4,59E-06	8,03E-13	3,11E-12	9,06E-12	0	4,59E-06
	Non-hazardous waste disposed (NHWD) [kg]	5,47E-06	1,49E-05	0	1,21E+00	8,82E-04	5,47E-06	1,49E-05	1,72E-05	0	-4,95E-02
	Radioactive waste disposed (RWD) [kg]	2,94E-08	1,24E-07	0	2,51E-06	-2,24E-08	2,94E-08	1,24E-07	7,88E-07	0	-2,42E-06
	Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0
	Materials for Recycling (MFR) [kg]	0	0	0	0	0	0	0	1,21E+00	0	0
	Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0
	Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0
	Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0

Declaration of variation

Variation between sites

This EPD covers a single product manufactured at one site. The variation in the GWP-GHG indicator is 0%.

Additional environmental information:

Electricity information

The Weber factory based in Ojakkala 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	Representative of the Guarantee of Origin purchased by Saint-Gobain Finland Oy, Weber
Share of electricity covered by Guarantee of Origin	100% of the energy consumption is covered by the GO 0% of electricity consumption is covered by residual mix
Energy sources for electricity	100% Hydro 2% transmission losses
Dataset version	Sphera CUP2024.2 ecoinvent 3.10
Source	Guarantee of Origin certificate: Entelios (supplier of GO)
GWP-GHG CO ₂ eq.	Hydro 0,006 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.

Transport to other countries

The transport to building site (A5) is based on Finland. Transport to other countries, A4, can be found below. The following transport assumptions has been made:

Country	Truck (km)	Ship (km)
Estonia	100	90
Latvia	414	90
Lithuania	700	90

	Estonia (A4)	Latvia (A4)	Lithuania (A4)
Environmental indicators			
Climate Change (total) [kg CO ₂ eq.]	8,49E-03	3,15E-02	5,24E-02
Climate Change (fossil) [kg CO ₂ eq.]	8,35E-03	3,09E-02	5,14E-02
Climate Change (biogenic) [kg CO ₂ eq.]	2,07E-05	8,28E-05	1,39E-04
Climate Change (land use change) [kg CO ₂ eq.]	1,19E-04	4,92E-04	8,31E-04
Ozone depletion [kg CFC-11 eq.]	8,02E-16	3,04E-15	5,07E-15
Acidification terrestrial and freshwater [Mole of H ⁺ eq.]	4,73E-05	7,22E-05	9,49E-05
Eutrophication freshwater [kg P eq.]	3,05E-08	1,25E-07	2,11E-07
Eutrophication marine [kg N eq.]	1,19E-05	2,01E-05	2,76E-05
Eutrophication terrestrial [Mole of N eq.]	1,33E-04	2,33E-04	3,24E-04
Photochemical ozone formation - human health [kg NMVOC eq.]	3,39E-05	5,72E-05	7,83E-05
Resource use, mineral and metals [kg Sb eq.]	6,27E-10	2,52E-09	4,24E-09
Resource use, energy carriers [MJ]	1,06E-01	3,96E-01	6,59E-01
Water deprivation potential [m ³ world equiv.]	1,07E-04	4,38E-04	7,39E-04
Resource use Indicators			
Use of renewable primary energy (PERE) [MJ]	7,87E-03	3,24E-02	5,46E-02
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	7,87E-03	3,24E-02	5,46E-02
Use of non-renewable primary energy (PENRE) [MJ]	1,06E-01	3,96E-01	6,59E-01
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	1,06E-01	3,96E-01	6,59E-01
Input of secondary material (SM) [kg]	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0
Use of net fresh water (FW) [m ³]	8,84E-06	3,63E-05	6,14E-05
Waste category & Output flows			
Hazardous waste disposed (HWD) [kg]	3,42E-12	1,28E-11	2,13E-11
Non-hazardous waste disposed (NHWD) [kg]	1,57E-05	6,07E-05	1,02E-04
Radioactive waste disposed (RWD) [kg]	1,35E-07	5,09E-07	8,50E-07
Components for re-use (CRU) [kg]	0	0	0
Materials for Recycling (MFR) [kg]	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0
Additional Indicator			
GWP-GHG / GWP-IOBC [kg CO ₂ eq.]	8,43E-03	3,12E-02	5,20E-02

Other additional environmental information

-

Additional social and economic information

No additional information displayed

Version history

This EPD is the first version

ABBREVIATIONS

DU	Declared unit
EPD	Environmental Product Declaration
eq.	equivalents
FU	Functional unit
g	gram
GHG	Green House Gases
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

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6. The International EPD System PCR 2019:14 Construction products and Construction services. Version 2.0.1
7. EN 998-1:2016 Specification for mortar for masonry Rendering and plastering mortar
8. EN 15941 Sustainability of construction works - Data quality for environmental assessment of products and construction work - Selection and use of data
9. C-PCR: 2019:14-c-PCR-017 Technical-chemical products (for construction sector) (c-PCR to PCR 2019:14) adopted from EPD Norway 2022-07-08
10. European Chemical Agency, Candidate List of substances of very high concern for Authorization. <https://echa.europa.eu/candidate-list-table>.
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