ENVIRONEMENTAL PRODUCT DECLARATION

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

Vertex® Reno G121

from: Saint-Gobain ADFORS CZ, s.r.o

Version 1
Version date: 2026-03-02
Validity: 5 years
Validity date: 2031-03-01

Scope of the EPD®: Europe

Type of EPD: EPD of a single product from a single manufacturer

Programme: The International EPD system, www.environdec.com

Programme operator: EPD International AB

Production plant: Saint-Gobain ADFORS CZ, s.r.o;
Sokolovská 106; 570 01 Litomyšl; The Czech Republic

Registration number
The International EPD system:
EPD-IES- 0028931:001

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
ADRESS:	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: Rouwette (chair), Noa Meron (co-chair) The review panel may be contacted via the Secretariat.

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
☐ 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: Marcel Gómez Ferrer, Marcel Gómez Consultoria Ambiental, S.L., info@marcelgomez.com
Approved by: The International EPD System

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

Ownership and limitations 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 programs, 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 of the EPD owner: Saint-Gobain ADFORS CZ, s.r.o, Sokolovská 106; 570 01 Litomyšl; the Czech Republic. https://eu.adfors.com/

Description of the organization of the EPD owner: Glass Fiber and technical textile manufacturer

Management system-related certification: ISO 14001:2015, ISO 9001:2015, ISO 50001:2018 (Approval number(s): ISO 14001 – 0052352, ISO 9001 – 0052353, ISO 50001 – 00027605)

LCA practitioner: Lucie Waniausova (Saint-Gobain ADFORS CZ, s.r.o, (lucie.waniausova@saint-gobain.com) & Jirina Galetova (Saint-Gobain ADFORS central team, jirina.galetova@saint-gobain.com)

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

PRODUCT INFORMATION

Product name: Vertex® Reno G121

Visual representation of the product:

UN CPC CODE: 54790 Other building completion and finishing services

Manufacturing site(s): Saint-Gobain ADFORS CZ, s.r.o – Sokolovská 106; 570 01 Litomyšl; The Czech Republic.

PRODUCT DESCRIPTION

ADFORS Vertex® Reno G121 is a very open but strong fiberglass render mesh which can anchor and support mortar to be applied easily and adhere correctly, allowing application of a thick mortar layer in a single step.

For facade reconstruction of old buildings with a typically mixed masonry substrate or a very uneven substrate, Vertex® Reno render mesh roll is highly recommended to easily achieve a flat surface and avoid the use of standard metal grids.

Main benefits:

→ **made from E-glass**

→ **allows application of thick layer of mortar in one step for renovation of facades**

→ **ideal for flattening of old, uneven walls**

→ **durable solution, passing ETAG 004**

→ **comfortable application thanks to lightness and ease of cutting**

Product is designed to meet main quality requirements and standard for glassfibre meshes:
→ CE certified
→ regularly audited and tested by main European laboratories CSTB, TZUS

The product is sold in rolls. The width of each roll is 110 cm (± 1%), the length is min 50 m, each roll is packed in a cardboard box and protected by a plastic film made of low-density polyethylene (LDPE).

For more information: https://eu.adfors.com/

Technical data/physical characteristics:

Basic parameters	Unit	Performance	Technical specification
Mass per unit area	g/m²	158 ± 5%	EAD 040016-01-0404
Mesh opening warp/weft	mm	(18,5/17,5) ± 0,5	
Thickness	mm	1,4 ± 0,2	

Tensile strength and elongation	Unit	Performance	Technical specification
Tensile strength in the 'as-delivered' state warp/weft	kN/m	min 40/ min 46	EAD 040016-01-0404
Average tensile strength in the 'as-delivered' state warp/weft	kN/m	min 50/min 56	
Elongation in the 'as-delivered' state	%	max 5/max 5	
Tensile strength after 28 days alkali conditioning warp/weft	kN/m %	min 25/min 25 min 50/min 50	
Average tensile strength after 28 days alkali conditioning warp/weft	kN/m	min 30/min 30	
Elongation after 28 days alkali conditioning warp/weft	%	max 4/max 4	

Application	Value / Description
Intended use and key functionalities	Facade reinforcement
Expected influence on the operational aspects and impact of the building or other construction work	Helps easily achieve a flat surface on mixed masonry and prevents cracks in render.
Restrictions to a type of construction or building	none
Lifespan	50 years

CONTENT DECLARATION

Description of the main components and/or materials for 1 m² of Vertex® Reno G121:

Product components	Weight (%)	Post-consumer recycled material (Weight %)	Biogenic Material (Weight % and kgC/kg)
Glass Fiber	75 - 85	0	0 resp. 0
Coating	15 - 25	0	8,53% resp. 0,46
Product	**Weight (kg/m²)**		
Vertex® Reno G121	**0,158**	**0**	**1,98% resp. 0,46**
Packaging materials	**Weight (kg/m²)**	**Weight%**	**Weight Biogenic carbon (kg C/kg)**
Low-density polyethylene (LDPE)	2,40E-03	1,53%	0
Polyethylene tape (PE)	6,10E-05	0,04%	0
Cardboard	6,10E-03	3,84%	0,45
Paper	1,20E-05	0,01%	0,43
Wooden Pallet	3,00E-02	19,18%	0,41

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).

LCA INFORMATION

TYPE OF EPD	Cradle to gate with options module C1-C4 and module D and optional modules A4-A5 and B1-B7
DECLARED UNIT	1 m² of Vertex® Reno G121 (0,158 kg/m²) installed and with an estimated useful life of 50 years
CONVERSION FACTOR	Surface density = 0,158 kg/m² Thickness = 1,4 mm
SYSTEM BOUNDARIES	Cradle to gate with options module C1-C4 and module D and optional modules A4-A5 and B1-B7
REFERENCE SERVICE LIFE (RSL)	The Reference Service Life (RSL) of the mesh product is 50 years. This value is the one commonly used in the industry. However, the service life of the product may be less than this design life if, for the example, the user chooses to renovate the facade.
CUT-OFF RULES	The cut-off criterion used in Saint-Gobain EPD will be the mass criterion with the following details: ➢ Considering all input and output flows in a unit process i.e. and the corresponding LCI whenever available ➢ The use of cut-off criterion on mass inputs and primary energy at the unit process level (1%) and at the information module level (5%) ➢ No simplification of the LCI by additional exclusions of material flows ➢ Polluter pays principle and modularity principle All inputs and outputs to the manufacturing plants have been included and made transparent. All assumptions regarding the materials and water balances have also been included All hazardous and toxic materials and substances are included in the inventory and the cut-off rules do not apply Care has been taken to include material and energy flows known to have the potential to cause significant emissions into air and water or soil. The long-term emissions haven’t been considered
ALLOCATIONS	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.

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).
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope: Europe Data is collected from one production site Saint-Gobain ADFORS CZ, s.r.o – Sokolovská 106; 570 01 Litomyšl, located in the Czech Republic Data collected for the year 2024
BACKGROUND DATA SOURCE	Databases from Sphera CUP2024.2 and ecoinvent v.3.10 EF Package 3.1
SOFTWARE	Sphera LCA for experts 10.9.0.31

Data quality declaration

EPD specific	Share of primary data	Process	Source type	Source	Reference year	Data category	A1-A3 GWP-GHG [%]
		Manufacturing process					
		Thermal energy	Database	Sphera 2024.2	<5 years old	Primary data	9,7%
		Electricity	Database	Sphera 2024.2 /ecoinvent 3.10	<5 years old	Primary data	0,14%
		RMs from EPD					
EPD specific	85%	Fiberglass yarn	EPD	EPD number S-P-11792	2023	Primary data	45%
						Total share of primary data	**56%**

A1-A3 GWP-GHG	**2,38E-01**

Data quality assessment

Data quality of primary data is judged by its precision, geographical and temporal representativity. For the other criteria:
Completeness (Geographical rating): no flow has been excluded else than those specified in the cut-off section
Consistency (Temporal rating): thanks to Saint-Gobain internal reporting tools, consistency is considered very good among this project and other projects of the company.
Technological (Technology rating): Data is specific to the company, processes and materials studied
An average was calculated per category. The final scores per category are as follows:

Geographical rating	Technology Rating	Temporal rating
3,2 Fair	3,0 Fair	2,0 Good

Quality level can range from Very good, Good, Fair, Poor to Very Poor with a best score of 1 (Very good) possible for each category. Fair geographical representativeness means that the process included in the data set is sufficiently representative of the geography stated in the location indicated in the data collection of the LCA/EPD. Fair technology rating means that technological aspects are like what is described in the data collection of the LCA/EPD but have room for improvement. Some of the relevant processes are not modelled with specific data but using proxies. Good temporal rating means that data used are not older than 3 years as with respect to the date of data collection of the LCA/EPD.

Data quality declaration

Data Collection	1.1.2024-31.12.2024
Sites used	Saint-Gobain ADFORS CZ – Litomyšl, Czech Republic
Geography	Produced in Czech Republic Sold in Europe Use and disposal in Europe
Technology	Glass fiber is woven into a greige. Then, it is coated by a formulation of chemicals (binder and additives) and goes through an oven to cure the binder and evaporate water. Hereafter, mesh is formatted and wrapped in accordance with the customer´s specification.
Averaging	Production weighted average covering 100% of production by the company
LCI/LCA database	Sphera CUP2024.2 and ecoinvent v.3.10
EPD used	EPD-IES-0011792:002
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	Glass Fiber yarn and SBR Binder
Use of Poor relevant data	None
Use of Very Poor relevant data	None

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
Geography	EU27		CZ	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27
Share of primary data	**56%**																
Variation products	**0%**																
Variation sites	**0%**																

LIFE CYCLE STAGES

A1-A3. Product stage

The product stage of the Vertex® Reno G121 product is subdivided into 3 modules A1, A2 and A3 respectively “Raw material supply”, “Transport to the manufacturer” and “Manufacturing”.

A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the studied manufacturing process. Specifically, the raw material supply covers production of glass fiber and coating components, and the packaging.

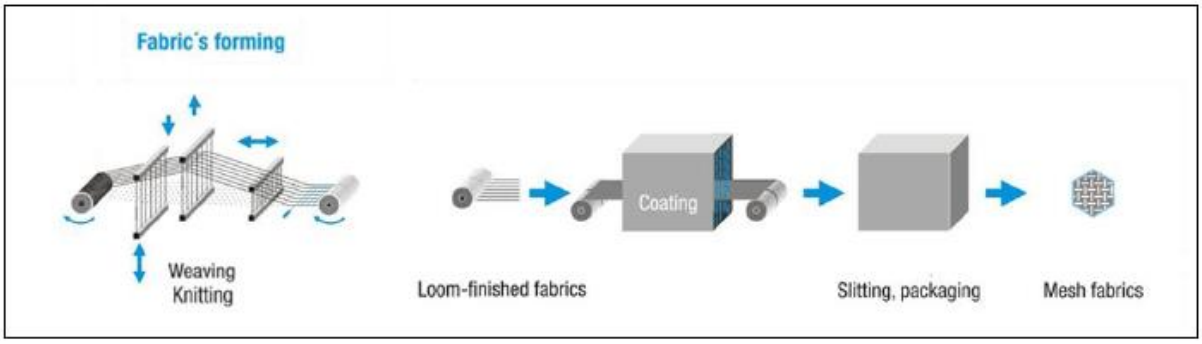
A2. Transport to the manufacturer

The raw materials are transported to the manufacturing site. In our case, modeling includes road transportation (average values from all suppliers) of each raw material.

A3. Manufacturing

This module includes the manufacturing of the product. Specifically, it covers the manufacturing of Vertex® Reno G121.

To produce meshes, glass yarns are woven or knitted then the fabric can be winded on a tube to be coated later or passed under a binder applicator where liquid resin formulation will be applied. After application of the binder, the mesh then passes through an oven to be dried. The final product is then winded and packaged.

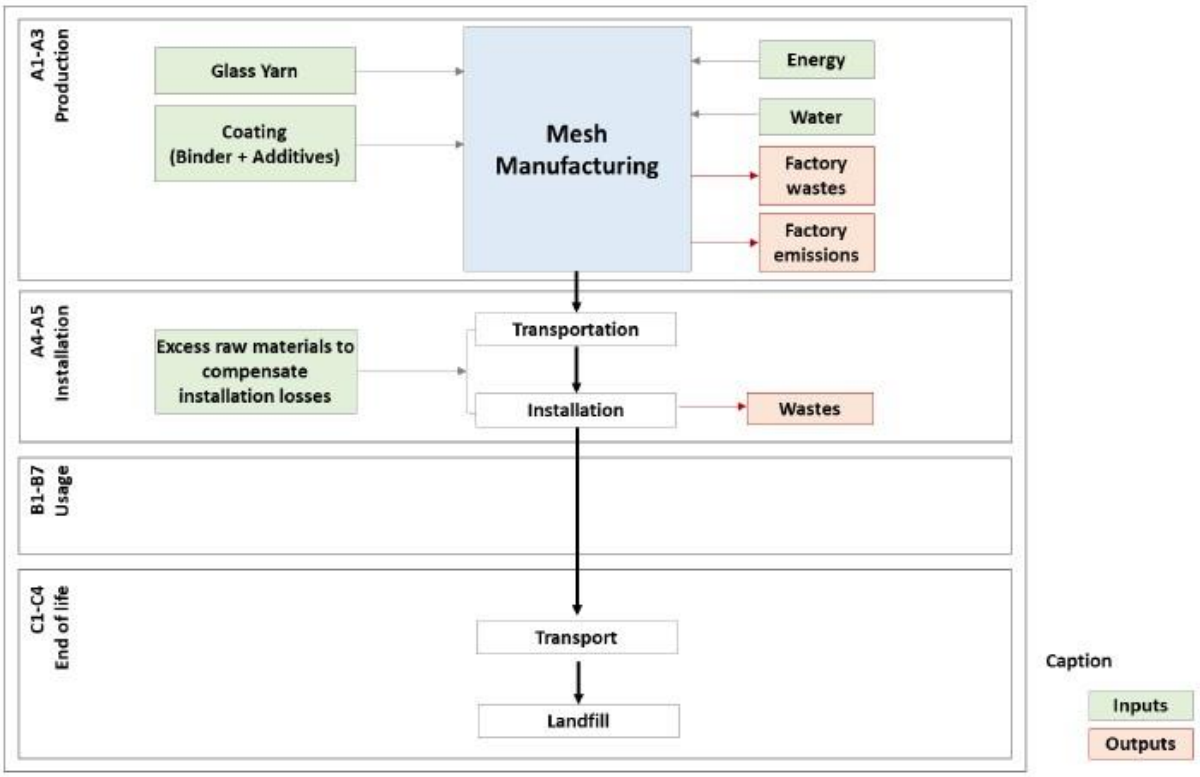


Due to the high similarity between the different mesh products in terms of materials, manufacturing processes, and physical characteristics, a uniform allocation approach was applied. The total environmental burden of manufacturing was equally distributed among the mesh products.

This module also includes the emissions and waste generated during manufacturing. Waste produced during manufacturing represents around 10,6% of total production in 2024.

Part of the waste leaving the plant is sent to landfill and is transported over 75 km. Part of the waste is sent to be recycled and is transported over 89 km on average.

Manufacturing process flow diagram



A4-A5. Construction process stage

The construction process is divided into 2 modules: A4, transport to the customer site and A5, installation. Since there is a product loss during installation (estimated at 5 %). The quantification of raw material compensation (A5) and its transport to the customer site (A4) are considered.

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 / Description
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, real load is 24 t and consumption of 38 liters per 100 km
Distance	Average distance between production site and customer facilities is 1110 km by truck
Capacity utilisation (including empty returns)	70% (30% empty returns)
Bulk density of transported products*	113 kg/m^3
Volume capacity utilisation factor	<1

A5. Installation in the building

Since the application of the reported product is done manually, no additional accessory or energy was considered for the installation phase of the product.

Parameter	Value / Description
Auxiliary inputs for the installation	No auxiliary inputs for the installation (manual installation).
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	5%
Distance	80 km to landfill by truck
Output materials (specified by type) as results of waste processing at the building site e.g., of collection for recycling, for energy recovering, disposal (specified by route)	- According to the European website "eurostat" pallets are: 36,6% recycled Wooden pallet: 1,1E-02 kg/m^2 And it has been considered that EUR pallets are reused up to 7 times - According to the European website "eurostat" cardboard and paper is: 86,6% recycled Cardboard 5,3E-03 kg/m^2 Paper 1,05E-05 kg/m^2 The rest of the waste (packaging and product) is sent to landfill: 5% of waste mesh during installation equivalent to 0,00925 kg/m^2 Wooden Pallet 1,93E-02 kg/m^2 Cardboard 7,6E-04 kg/m^2 Paper 1,62E-06 kg/m^2 Low density polyethylene film (LDPE) 2,4E-03 kg/m^2 Polyethylene (PET) 6,1E-05 kg/m^2 The distances used for the landfill and recycling center are 80 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:** 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 place with no requirements for maintenance, repair, replacement, or refurbishment throughout this period. Therefore, it has no impact on this stage.

C1-C4. End of Life Stage

This stage includes the next modules:

- **C1: Deconstruction, demolition.** As the Vertex® Mesh products are dismantled together with the wall during demolition, the environmental impact related to their deconstruction is assumed to be equivalent to masonry demolition, based on an energy consumption of 5 kWh/ton.
- **C2: Transport to waste processing.** The model used for the transportation (80 km distance to the landfill) is applied.
- **C3: Waste processing for reuse, recovery and/or recycling.** The product is landfilled without reuse, recovery, or recycling.
- **C4: Waste disposal**, including physical pre-treatment and site management. The Vertex Mesh is assumed to be 100% landfilled. Compaction factor for depositing waste to the landfill was considered (1,6 kWh/ton).

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

Parameter	Value / Description
Collection process specified by type	The entire product (0,158 kg of G121 Mesh) is collected alongside any mixed construction waste
Recovery system specified by type	There is no recovery, recycling or reuse of the product once it has reached its end-of-life phase.
Disposal specified by type	The product alongside the mixed construction waste from demolishing will go to landfill
Assumptions for scenario development (e.g. transportation)	The waste going to landfill will be transported by truck with 27 t payload, using diesel as a fuel consuming 38 liters per 100 km Transport distance to landfill: 80 km

D. Reuse/recovery/recycling potential

In module D it is 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.

According to the last data available on the Eurostat website from 2023, when the study was conducted, the figures for Czech Republic are: 86,6% of cardboard packaging is recycled and the remaining 13,4% are sent to landfill. 36,6% of pallets are recycled and 63,4% are sent to landfill. The rest of the waste produced is landfilled. Hence, only recycling benefits for packaging are reported on stage D.

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.

An EPD (S-P-11792) based on EF 3.0 was used as a primary data source. This was assessed to yield identical, conservative results compared to fully using the current EF 3.1 version.

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 about these results are high or as there is limited experience with the following indicators:

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

Disclaimer 2: 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 m^2 of installed Vertex® Reno G121 with a weight of 0,158 kg/m^2. The following results refer 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.]	1,70E-01	1,22E-02	6,35E-02	0	0	0	0	0	0	0	2,85E-04	9,50E-04	0	1,58E-02	-3,01E-03
Climate Change (fossil) [kg CO2 eq.]	2,38E-01	1,20E-02	3,00E-03	0	0	0	0	0	0	0	2,85E-04	9,34E-04	0	3,00E-03	-3,00E-03
Climate Change (biogenic) [kg CO2 eq.]	-6,79E-02	0	6,05E-02	0	0	0	0	0	0	0	0	0	0	1,28E-02	0
Climate Change (land use change) [kg CO2 eq.]	2,43E-04	1,99E-04	8,07E-06	0	0	0	0	0	0	0	2,47E-08	1,57E-05	0	1,49E-05	-1,21E-05
Ozone depletion [kg CFC-11 eq.]	1,04E-08	1,20E-15	9,93E-11	0	0	0	0	0	0	0	4,36E-12	9,42E-17	0	1,40E-12	-1,14E-10
Acidification terrestrial and freshwater [Mole of H+ eq.]	6,14E-04	1,34E-05	9,79E-06	0	0	0	0	0	0	0	2,57E-06	1,08E-06	0	2,02E-05	-1,11E-05
Eutrophication freshwater [kg P eq.]	1,32E-05	5,06E-08	1,92E-07	0	0	0	0	0	0	0	8,32E-09	3,99E-09	0	6,20E-07	-2,48E-06
Eutrophication marine [kg N eq.]	2,53E-04	4,63E-06	7,16E-06	0	0	0	0	0	0	0	1,20E-06	3,77E-07	0	5,09E-06	-6,87E-06
Eutrophication terrestrial [Mole of N eq.]	2,41E-03	5,48E-05	4,13E-05	0	0	0	0	0	0	0	1,31E-05	4,45E-06	0	5,59E-05	-3,00E-05
Photochemical ozone formation - human health [kg NMVOC eq.]	6,73E-04	1,29E-05	1,10E-05	0	0	0	0	0	0	0	3,89E-06	1,04E-06	0	1,58E-05	-9,54E-06
Resource use, mineral and metals [kg Sb eq.][1]	2,80E-07	1,01E-09	3,92E-09	0	0	0	0	0	0	0	1,02E-10	7,96E-11	0	2,22E-10	-1,68E-08
Resource use, energy carriers [MJ][1]	6,74E+00	1,55E-01	6,50E-02	0	0	0	0	0	0	0	4,00E-03	1,20E-02	0	4,30E-02	-4,10E-02
Water deprivation potential [m³ world equiv.][1]	1,16E-01	1,77E-04	6,10E-04	0	0	0	0	0	0	0	1,15E-05	1,39E-05	0	3,50E-04	-3,00E-03

[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

RESOURCE 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]	2,44E-01	1,30E-02	3,00E-03	0	0	0	0	0	0	0	2,29E-05	1,00E-03	0	7,00E-03	-4,40E-02
Primary energy resources used as raw materials (PERM) [MJ] [2]	7,18E-01	0	-5,17E-01	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ] [2]	9,63E-01	1,30E-02	-5,14E-01	0	0	0	0	0	0	0	2,29E-05	1,00E-03	0	7,00E-03	-4,40E-02
Use of non-renewable primary energy (PENRE) [MJ] [2]	6,63E+00	1,55E-01	6,40E-02	0	0	0	0	0	0	0	4,00E-03	1,20E-02	0	4,30E-02	-4,10E-02
Non-renewable primary energy resources used as raw materials (PENRM) [MJ] [2]	1,13E-01	0,00	5,63E-03	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ] [2]	6,74E+00	1,55E-01	6,96E-02	0	0	0	0	0	0	0	4,00E-03	1,20E-02	0	4,30E-02	-4,10E-02
Use of secondary material (SM) [kg]	9,55E-03	0	4,77E-04	0	0	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	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	2,45E-03	1,47E-05	1,64E-05	0	0	0	0	0	0	0	2,67E-07	1,16E-06	0	1,06E-05	-7,11E-05

[2] From EPD International Construction Product PCR 2.0 (Annex 3). The option B was reatined to calculate the primary energy use indicators.

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]	5,00E-03	5,01E-12	5,20E-05	0	0	0	0	0	0	0	3,23E-06	3,95E-13	0	1,03E-06	-1,85E-04
Non-hazardous waste disposed (NHWD) [kg]	3,70E-02	2,41E-05	1,60E-02	0	0	0	0	0	0	0	2,49E-05	1,90E-06	0	1,58E-01	-2,00E-03
Radioactive waste disposed (RWD) [kg]	7,77E-04	2,00E-07	6,18E-06	0	0	0	0	0	0	0	4,10E-10	1,58E-08	0	5,07E-07	6,41E-07
Components for re-use (CRU) [kg]	0	0	2,70E-02	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	0	0	1,64E-02	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	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	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ADDITIONAL VOLUNTARY INDICATORS FROM EN 15804 + A2

Environmental indicators	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY RECYCLING
	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.][3]	2,38E-01	1,20E-02	4,00E-03	0	0	0	0	0	0	0	2,85E-04	9,53E-04	0	3,00E-03	-3,00E-03

[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

Biogenic Carbon Content	PRODUCT STAGE A1 / A2 / A3
Biogenic carbon content in product [kg]	3,48E-03
Biogenic carbon content in packaging [kg]	1,51E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2. The biogenic carbon content in the product comes from the coating. For packaging biogenic carbon content is quantified for the cardboard, the pallet, and the paper.

DECLARATION OF VARIATION

Variation between sites

This EPD covers one product manufactured at one site. Hence the variation in the GWP-GHG indicator between sites was not calculated.

Variations between products

According to PCR 2.0.1, since this EPD is for one product only, the variation of impact between products is irrelevant.

ADDITIONAL ENVIRONMENTAL INFORMATION:

Electricity information

The factory based in Litomyšl, Czech Republic, uses the following 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's covers 100% of the electricity consumption on the manufacturing site.

Parameter	Information
Location	Nuclear electricity purchased by Saint-Gobain ADFORS CZ, s.r.o
Reference year	2024
Geographical & technical representativeness	Share of energy sources Nuclear 100% 2% transmission losses
Dataset version	Cradle to gate from Sphera database **Dataset: Electricity from nuclear powerplant (01/04/2024)**
Source of electricity mix	Sphera database 2024: dataset valid until 2026
GHG-GWP CO_2 eq.	0,005 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

VERSION HISTORY

Original version of the EPD, 2026-03-02

ABREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
CEN	European Committee for Standardization
CPC	Central product classification
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO_2 eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO_2 eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO_2 eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO_2 eq.)
GWP-total	Total Global Warming Potential (kg CO_2 eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO_2 eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H^+ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m^3)
Resource Use Indicators	
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)
PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m^3)

Waste Indicators	
HWD	Hazardous Waste (disposed) (kg)
NHWD	Non-Hazardous Waste (disposed) (kg)
RWD	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CRU	Components for Reuse (kg)
MFR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
Life cycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2 eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2 eq.	Kilograms of Carbon Dioxide Equivalent

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