ENVIRONMENTAL PRODUCT DECLARATION

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

PLACA LEV 600

Version: 01
Date of publication: 2025/01/23
Validity: 5 years
Valid until: 2030/01/23
Scope of the EPD®: Brazil

The International EPD®
Programme operator: EPD international AB
System Registration number:
EPD-IES-0008153

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Saint-Gobain: World leader in sustainable construction

Global leader in lightweight and sustainable construction, Saint-Gobain designs, manufactures, and distributes materials and services for the construction and industrial markets. Its integrated solutions for renovation, lightweight construction, and decarbonization of construction and industry are developed through a process of continuous innovation and promote sustainability and performance. The Group's commitment is guided by its purpose, "MAKING THE WORLD A BETTER HOME". With this corporate purpose, the Group took on its ambition to improve everyone’s lives by making the planet a fairer, more inclusive, more harmonious, healthier and sustainable living space.

Saint-Gobain Brasil presents a highly diversified product portfolio that meets the demands of various markets, including industry, construction, and mobility. For the construction sector, one of these brands is Placo, which offers gypsum-based solutions, namely plasterboard systems, and it’s committed to developing solutions for so-called drywall construction.

The ongoing commitment to developing integrated solutions for building renovation, light construction, and industry decarbonization responds to current challenges and contributes to resource efficiency and the fight against climate change, reinforcing Saint-Gobain's commitment to innovation and sustainability.

Company certifications

ISO 9001 - Quality management system
ISO 14001 - Environment management system
ISO 45001 - Occupational health and safety management system

TOP EMPLOYER - Human Resource Management Best Practices

Company information

Owner of the EPD: PLACO DO BRASIL LTDA, SAINT-GOBAIN BRASIL
Production plant: Feira de Santana plant - Rodovia BR 324 Oeste, km 529, Humildes, Feira de Santana/BA, Brazil
Programme used: International EPD System **http://www.environdec.com/**
PCR identification: EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works – Environmental product declaration - core rules for the product category of construction product and The International EPD® System PCR 2019:14 version 1.3.3 for Construction products and Construction services
Complementary PCR: c-PCR-031 to PCR 2019:14. Gypsum-based construction products (EN 17328:2024)
UN CPC code: 37530 Articles of plaster or of composition based on plaster
Product / product family name and manufacturer represented: PLACA LEV 600 - 7.05 kg/m² produced by PLACO DO BRASIL LTDA, SAINT-GOBAIN BRASIL
EPD Prepared by: LATAM LCA Team, Saint-Gobain Research Brasil.
Contact: Sartor, Lucas de Bona (lucas.sartor@saint-gobain.com); Exposito, Caio Cesar Dente (caio.exposito@saint-gobain.com); Frota, Thiago Marques da (thiago.frota@ext.saint-gobain.com)
Geographical scope of the EPD®: Brazil
EPD registration number: EPD-IES-0008153
Declaration issued: 2025-01-23 **Valid until:** 2030-01-23
Demonstration of verification: an independent verification of the declaration was made, according to ISO 14025:2010. This verification was external and conducted by the following third party based on the PCR mentioned above.

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:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard UNE-EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction Products, version 1.3.3
PCR review was conducted by: El Comité Técnico del Sistema Internacional EPD© President: Claudia A. Peña. Contact via info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: LATAM LCA Team, Saint-Gobain Research Brasil
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third party verifier: Pablo Arena (aparena@gmail.com) Approved by: The International EPD© System
Procedure for follow-up of data during EPD validity involves third part verifier: ☒ Yes ☐ No

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Product description

Product description and use

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 m² of installed PLACA LEV 600 plasterboard 12.5 mm with a weight of 7.05 kg/m² and an expected average service life of 50 years.

PLACA LEV 600 plasterboard has a natural gypsum core added with additives between two sheets of grey cardboards. This product is designed for indoor applications in dry environments at room temperature. It is ideally suited for use in ceilings.

Technical data/physical characteristics

PARAMETER	VALUE/ DESCRIPTION
Thermal conductivity	0.25 W/(m·K) (ISO 10456)
Reaction to fire	Class II - A (ISO 1189)
Density	7.05 kg/m²

Description of the main product materials of product

Products Components	Weight, kg	Post-consumer recycled material, weight-% of product	Biogenic material, weight - % of product	Biogenic material, kg C/product
Gypsum	6.61	0	0	0
Additives	0.08	0	0.3	2.0E-02
Facing	0.36	0	2.3	1.6E-01
Sum	7.05	0	2.5	1.8E-01

Description of the main product materials of packaging

Packaging materials	Weight, kg	Weight-% (versus the product)	Biogenic material, kg C/product
Low-density polyethylene film	3.5E-03	< 1	0
Wooden Pallet	4.6E-02	< 1	1.3E-01
Sum	5.0E-02	< 1	1.3E-01

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0.1% of the weight of the product. The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

LCA calculation information

EPD TYPE DECLARED	Cradle to grave and module D
FUNCTIONAL UNIT	1 m² of installed board with a weight of 7.05 kg/m² and an expected average service life of 50 years
SYSTEM BOUNDARIES	Cradle to grave + Module D = (A + B + C) + D
REFERENCE SERVICE LIFE (RSL)	The Reference Service Life (RSL) of the Gypsum product is considered to be 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	Due to there are not enough information, the process energy and materials representing less than 1% of the whole energy and mass used are excluded (since do not cause significant impacts). The addition of all the inputs and outputs excluded are not bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred. Flows related to infrastructure, capital goods, human activities such as employee transport are excluded. The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.
ALLOCATIONS	Allocation has been avoided when possible. For the energy, the auxiliaries used and wastes generated during manufacturing a physical allocation based on mass was applied. Allocation criteria are based on mass. The polluter pays as well the modularity principles have been followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope includes: Brazil Data is collected from one production site in Feira de Santana PLACO DO BRASIL LTDA, SAINT-GOBAIN BRASIL Data collected for the year 2023 (6 months).
BACKGROUND DATA SOURCE	Background data: Ecoinvent 3.9.1 and Sphera 2023
SOFTWARE	GaBi 10

LCA scope

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	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR
Specific data used	>90% GWP- GHG																
Variation products	one site one product																
Variation sites	one site one product																

Life cycle stages

Flow diagram of the Life Cycle

Product stage, A1-A3

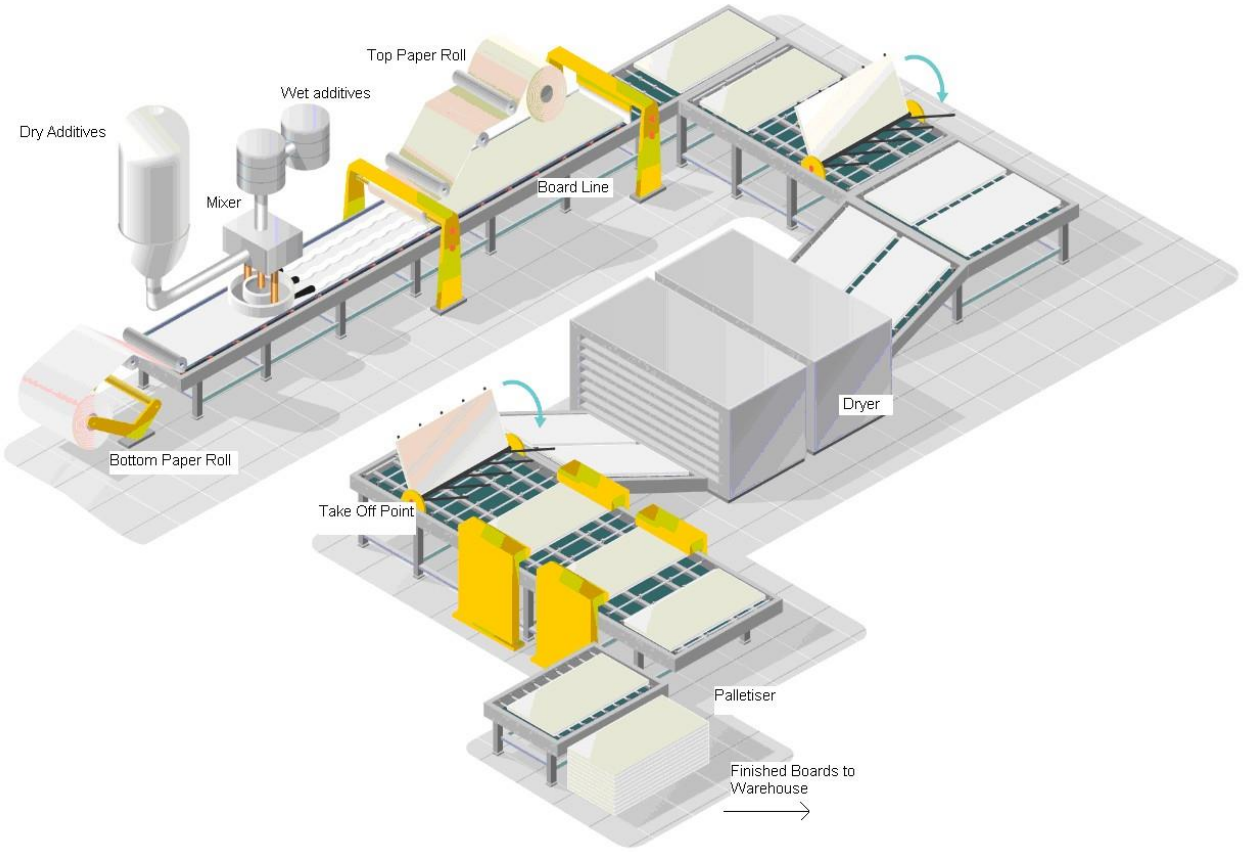
Description of the stage: the product stage of plaster products is subdivided into 3 modules A1, A2 and A3 respectively “Raw material supply”, “transport to manufacturer” and “manufacturing”.

A1, raw material supply.
This includes the extraction and processing of all raw materials and energy which occur upstream from the manufacturing process. The production of packaging material is taken into account at this stage.

A2, transport to the manufacturer.
The raw materials are transported to the manufacturing site. The modelling includes road, boat and/or train transportations.

A3, manufacturing.
This module includes the manufacture of the product. The processing of any waste arising from this stage is also included.

Manufacturing process flow diagram



Manufacturing in detail:
The raw materials are homogenously mixed to form a gypsum slurry that is spread via multiple hose outlets onto a paper liner on a moving conveyor belt. A second paper liner is fed onto the production line from above to form the plasterboard. The plasterboard continues along the production line where it is finished, dried, and cut to size.

Construction process stage, A4-A5

Description of the 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. A weighted average, based on sales volume for the building site is considered to obtain the average distance in this module. Transport is calculated based on a scenario with the parameters described in the following table.

PARAMETER	VALUE (expressed per functional unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	Long distance truck, maximum load weight of 31 t and consumption of 24 liters per 100 km
Distance	1445 km
Capacity utilisation	89%
Bulk density of transported products	564 kg/m^3
Volume capacity utilisation factor	1080 kg of boards; 6.64 kg of wooden pallets

A5, installation into the building.
The accompanying table quantifies the parameters for installing the product at the building site. All installation materials and their waste processing are included.

PARAMETER	VALUE (expressed per functional unit)
Ancillary materials for installation (specified by materials)	Jointing compound: 0.84 kg/m² board Jointing tape: 2.8 kg/m² board
Water use	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	Plasterboard: 0.35 kg (5%) Jointing Compound: 0.042 kg Jointing Tape: 0.0005 kg Polyethylene film: 0.00046 kg Wooden Pallet: 0.0061 kg
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)	- Plasterboard: 0.04 kg (recycling), 0.30 kg (landfill) - Jointing Compound: 0.0063 kg (recycling), 0.0537 kg (landfill) - Jointing Tape: 0.0001 kg (recycling), 0.0004 kg (landfill) - Polyethylene film: 0.00046 kg (landfill) - Wooden pallet: 0.0019 kg (recycling), 0.0042 kg (landfill)
Direct emissions to ambient air, soil and water	None

- The wastage of product is 5%, of which it is assumed that 85% is sent to landfill and 15% is recycled. The landfill site is located 100 km away and the recycle site is 50 km away.
- Within module A5, site-related packaging waste processing is included in the LCA. The end-of-life of packaging materials is reported and allocated to the module where it arises. Wood pallets are considered 31% collected and recycled, while polyethylene film is sent 100% to landfill.

Use stage (excluding potential savings), B1-B7

The use stage, related to the building fabric includes:
B1, use or application of the installed product;
B2, maintenance;
B3, repair;
B4, replacement;
B5, refurbishment;
B6, operational energy use;
B7, operational water use.

Description of scenarios and additional technical information:
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. Gypsum products are not related to any electricity or water use during the operation of the building.

End-of-life stage, C1-C4

The de-construction and/or dismantling processes mainly use energy for mechanical operations. An average distance from the demolition site to landfills and recycling plants in the study region site have been taken into account.

PARAMETER	VALUE (expressed per functional unit)
Amount per kg of consumed fuel	0.0437 MJ/kg (diesel consumption in construction machine)
Collection process specified by type	85% of plasterboard is collected with mixed deconstruction and demolition waste sent to landfill. The remaining 15% is collected separately for recycling.
Recovery system specified by type	1.00 kg recycled (board weight + ancillary)
Disposal specified by type	5.66 kg to landfill (board weight + ancillary)
Assumptions for scenario development (e.g. transportation)	Gypsum board waste is transported 100 km by truck from deconstruction/demolition sites to landfill and 50 km to recycling facilities.

The transport characteristics used in this stage (real payload, diesel consumption of the truck and percentage of empty return) correspond to the default values defined in the EN15804:2012+A2:2019/AC:2021 standard.

Reuse/recovery/recycling potential, D

Module D considers the benefits and loads beyond the system boundary resulting from recycling and energy recovery processes.

85% of waste is landfilled, while the remaining 15% is assumed to be recycled using local demolition waste data.

Module D includes the benefits and loads from the net flows of recycled plasterboard exiting the product system and substituting the equivalent primary materials.

LCA results

As specified in EN 15804:2012+A2:2019/AC:2021 and the PCR 2019:14 Construction Products, version 1.3.3 is not recommending the use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C. Furthermore, the estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. All emissions to air, water, and soil, and all materials and energy used have been included.

The results of impact categories such as abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity (noncancer), and ecotoxicity (freshwater) may exhibit high levels of uncertainty in LCAs that include capital goods/infrastructure in generic datasets in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological, and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

The environmental impacts are declared and reported using the baseline characterization factors are from the ILCD. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant (Production data according 2023, 6 months, and transport data according 2023, 6 months). Characterisation factors EN15804 based on EF 3.1.

All the results refer to a functional unit of 1 m² of installed plasterboard 12.5 mm with a weight of 7.05 kg/m² and an expected average service life of 50 years.

Environmental Impacts

	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
	Climate Change [kg CO2 eq.]	1.03E+00	6.60E-01	6.22E-01	0	0	0	0	0	0	0	3.07E-02	4.04E-02	4.14E-03	6.42E-01	-2.07E-03
	Climate Change (fossil) [kg CO2 eq.]	1.75E+00	6.49E-01	4.50E-01	0	0	0	0	0	0	0	3.07E-02	3.97E-02	4.14E-03	8.46E-02	-2.05E-03
	Climate Change (biogenic) [kg CO2 eq.]	-7.26E-01	0.00E+00	1.69E-01	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	5.58E-01	0.00E+00
	Climate Change (land use change) [kg CO2 eq.]	1.05E-02	1.08E-02	3.18E-03	0	0	0	0	0	0	0	1.04E-06	6.53E-04	3.29E-07	2.47E-04	-2.21E-05
	Ozone depletion [kg CFC-11 eq.]	1.15E-08	6.47E-14	2.45E-07	0	0	0	0	0	0	0	2.55E-15	5.57E-15	5.29E-16	3.19E-16	-2.21E-14
	Acidification terrestrial and freshwater [Mole of H+ eq.]	5.47E-03	3.69E-03	2.77E-03	0	0	0	0	0	0	0	1.10E-04	2.29E-04	2.94E-05	6.16E-04	-1.01E-05
	Eutrophication freshwater [kg P eq.]	8.03E-05	2.74E-06	8.19E-05	0	0	0	0	0	0	0	6.72E-09	1.66E-07	1.23E-09	1.48E-07	-7.62E-09
	Eutrophication marine [kg N eq.]	2.01E-03	1.80E-03	9.41E-04	0	0	0	0	0	0	0	2.88E-05	1.12E-04	5.60E-06	1.59E-04	-4.38E-06
	Eutrophication terrestrial [Mole of N eq.]	2.07E-02	2.00E-02	8.29E-03	0	0	0	0	0	0	0	3.15E-04	1.24E-03	6.13E-05	1.74E-03	-5.13E-05
	Photochemical ozone formation - human health [kg NMVOC eq.]	4.84E-03	3.46E-03	1.86E-03	0	0	0	0	0	0	0	8.66E-05	2.17E-04	1.62E-05	4.80E-04	-1.15E-05
	Resource use, mineral and metals [kg Sb eq.][1]	1.85E-06	5.47E-08	1.38E-05	0	0	0	0	0	0	0	6.87E-10	3.38E-09	4.99E-10	7.74E-09	-3.64E-10
	Resource use, energy carriers [MJ][1]	2.70E+01	8.39E+00	6.87E+00	0	0	0	0	0	0	0	3.69E-01	5.11E-01	5.11E-02	1.13E+00	-2.76E-02
	Water deprivation potential [m³ world equiv.][1]	5.53E-01	9.57E-03	3.14E-02	0	0	0	0	0	0	0	5.78E-05	6.00E-04	1.32E-05	9.01E-03	-5.38E-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.

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Resources Use

		Product stage	Construction stage		Use stage							End of life stage				Reuse, recovery, recycling
	Resources Use indicators	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Use of renewable primary energy (PERE) [MJ]	2.56E+00	7.09E-01	1.38E+00	0	0	0	0	0	0	0	1.92E-03	4.40E-02	4.50E-04	1.48E-01	-1.22E-02
	Primary energy resources used as raw materials (PERM) [MJ][2]	7.99E+00	0.00E+00	3.99E-01	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total use of renewable primary energy resources (PERT) [MJ]	1.05E+01	7.09E-01	1.78E+00	0	0	0	0	0	0	0	1.92E-03	4.40E-02	4.50E-04	1.48E-01	-1.22E-02
	Use of non-renewable primary energy (PENRE) [MJ]	2.68E+01	8.39E+00	1.03E+01	0	0	0	0	0	0	0	3.69E-01	5.11E-01	5.11E-02	1.13E+00	-2.76E-02
	Non-renewable primary energy resources used as raw materials (PENRM) [MJ][2]	1.84E-01	0.00E+00	9.22E-03	0	0	0	0	0	0	0	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]	2.70E+01	8.39E+00	1.03E+01	0	0	0	0	0	0	0	3.69E-01	5.11E-01	5.11E-02	1.13E+00	-2.76E-02
	Input of secondary material (SM) [kg]	3.82E-01	0.00E+00	2.18E-02	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Use of renewable secondary fuels (RSF) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Use of non-renewable secondary fuels (NRSF) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Use of net fresh water (FW) [m^3]	1.49E-02	7.96E-04	4.68E-03	0	0	0	0	0	0	0	2.34E-06	4.90E-05	5.57E-07	2.84E-04	-5.46E-06

[2] 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 where materials are recycled or recovered, but not when landfilled.

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Waste Category & Output flows

	Waste Category & Output Flows	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
	Hazardous waste disposed (HWD) [kg]	7.34E-07	2.71E-10	6.89E-06	0	0	0	0	0	0	0	1.15E-11	1.93E-11	6.97E-12	1.72E-08	-2.47E-11
	Non-hazardous waste disposed (NHWD) [kg]	1.67E-02	1.30E-03	3.67E-01	0	0	0	0	0	0	0	8.82E-05	8.32E-05	9.51E-06	5.67E+00	-1.31E-05
	Radioactive waste disposed (RWD) [kg]	9.74E-05	1.08E-05	1.05E-05	0	0	0	0	0	0	0	4.32E-07	9.09E-07	1.43E-07	1.28E-05	-9.90E-07
	Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Materials for Recycling (MFR) [kg]	1.94E-02	0.00E+00	8.07E-02	0	0	0	0	0	0	0	0	0	1.00E+00	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

Information on biogenic carbon content

	Biogenic Carbon Content	Product stage A1 / A2 / A3
	Biogenic carbon content in product [kg]	1.79E-01
	Biogenic carbon content in packaging [kg]	1.91E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 (approx. 3,67) kg CO_2.

Additional voluntary indicators from EN 15804

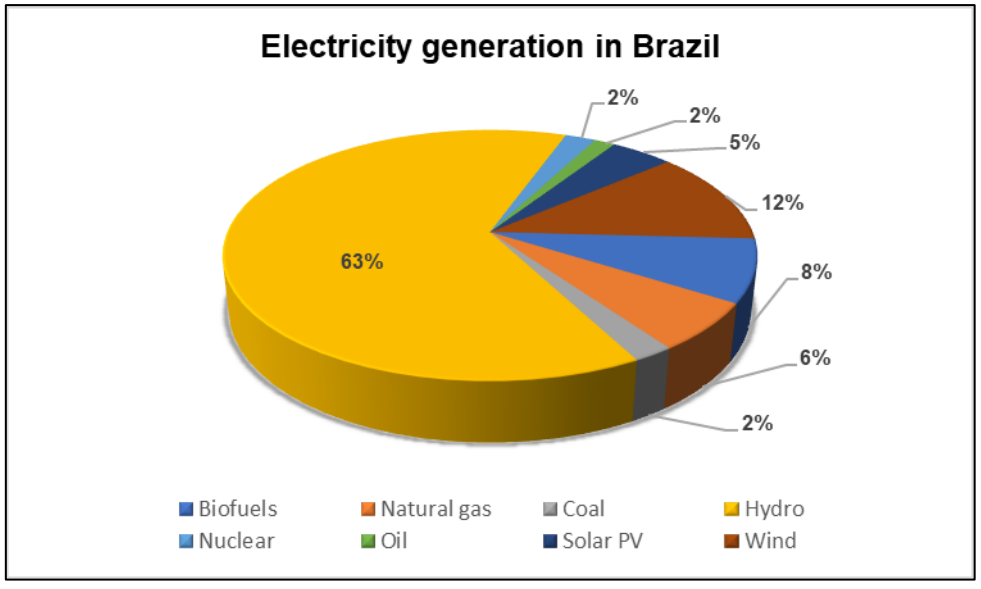
	Product stage	Construction stage		Use stage							End of life stage				D Reuse, recovery, recycling
Impacts Indicators	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP-GHG (kg CO2 eq.)[3]	1.73E+00	6.43E-01	2.45E-01	0	0	0	0	0	0	0	3.03E-02	3.93E-02	4.11E-03	8.41E-02	-2.05E-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.

Additional information

Electricity description

TYPE OF INFORMATION	DESCRIPTION
Location	Representative of Electricity purchased by PLACO DO BRASIL LTDA, SAINT-GOBAIN BRASIL Brazil
Geographical representativeness description	Split of energy sources in Brazil - Coal: 2% - Oil: 2% - Biofuel: 8% - Natural gas: 6% - Nuclear: 2% - Hydro: 63% - Photoelectrical: 5% - Wind: 12%
Reference year	2022
Type of data set	Cradle to gate from Thinkstep database
Source	International Energy Agency (IEA). Electricity Information - 2024
CO_2 emissions kg CO2 eq. / kWh	0.11 kg CO_2 eq./kWh - Climate change - total indicator 0.13 kg CO_2 eq./kWh - GWP-GHG indicator



Data quality

Inventory data quality is judged by geographical, temporal, and technological representativeness. To cover these requirements and to ensure reliable results, first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records and reporting documents from PLACO DO BRASIL LTDA, SAINT-GOBAIN BRASIL. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects good inventory data quality for the geographical, temporal and technological categories.

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