



ENVIRONMENTAL PRODUCT DECLARATION

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

Rigips® RF 15 Fireboard



THE INTERNATIONAL EPD® SYSTEM

The International EPD®

Programme operator: EPD international AB

Registration number:

S-P: EPD-IES-0018050

Version: 01

Date of publication: 2025/01/30

Validity: 5 years

Valid until: 2030/01/29

Scope of the EPD®: Europe



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



Programme information

PROGRAMME:	The International EPD® System
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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 1.3.2

PCR review was conducted by: The Technical Committee of the International EPD® System
See www.environdec.com for a list of members.

President: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact - Contact via info@environdec.com

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

☐ EPD process certification ☒ EPD verification

Third party verifier:

Dr Andrew Norton, Director of Renuables Ltd LCA. Materials. Energy

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Approved by: The International EPD© System

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

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.

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

Product information

Company information

Manufacturer: Saint-Gobain Construction Products Romania, RIGIPS]

Saint-Gobain designs, manufactures and distributes materials and services for the construction and industrial markets.

Its integrated solutions for the renovation of public and private buildings, light construction and the decarbonization of construction and industry are developed through a continuous innovation process and provide sustainability and performance.

Our plaster solutions are represented by 5 brands: Gyproc®, Placo®, Rigips®, British Gypsum® and CertainTeed®. Our brands are present in more than 70 countries and are supported by a network of 94 manufacturing sites.

Saint-Gobain Rigips designs, manufactures and distributes plaster products, wall systems, ceilings and innovative products that improve well-being in the spaces where people live and experience.

Wide range of high-quality performance products as well as complete solutions to meet the needs of thermal comfort, acoustics, moisture protection and fire resistance.

Production plant(s): Romania, Turda

Management system-related certification: ISO 9001, ISO 14001, ISO 45001, ISO 50001

Programme used: 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 identification: PCR 2019:14 version 1.3.2 for Construction products

c-PCR identification: c-PCR version:2024-08-06 for Gypsum-based construction products (EN 17328)

Prepared by: IVL Swedish Environmental Research Institute, EPD International Secretariat

UN CPC CODE: 37530 Articles of plaster or of composition based on plaster

Owner of the declaration: Saint-Gobain Construction Products Romania RIGIPS Business Unit

Product name and manufacturer represented: Rigips® RF 15

EPD® prepared by: Ana-Maria Dumitru (Saint-Gobain România) and Yves Coquelet (Saint-Gobain LCA central team)

The intended use of this EPD is for B2B communication.

Geographical scope of the EPD®: Europe

EPD® registration number: EPD-IES-0018050

Date of publication: 2025/01/30; **valid until:** 2030/01/29

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.



Product description

Product description and description of use

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1m² of installed gypsum board 15 mm with a weight of 12.69kg/m² with a useful life of 50 years.

Rigips® RF 15 is a **gypsum-based** plasterboard consisting of an aerated gypsum core encased in, and firmly bonded to, strong paper liners. The gypsum core contains mineral fibres and other additives to improve core adhesion at high temperature. Rigips RF 15 is a type DF plasterboard conforming to the requirements of EN 520:2004+A1:2009 standard and comes with tapered edge on the long edges and has short edges sawn straight.

Rigips® RF 15 is a plasterboard that is suitable for fire-resistant dryline for internal surfaces and for construction partitions. Rigips plasterboard are part of solutions for modern buildings providing moisture, fire, sound, thermal and impact resistance together with superbly smooth surfaces to create contemporary internal environments.

If the EPD is based on a representative product, a justification for why this is representative.

Technical data

Parameter	Value / Description
EN Classification	Type DF – 15 – EN – 520
Reaction to fire	A2-s1, d0, acc to SR EN 520+A1:2010
Water vapour resistance factor, μ	10/4 (dry/wet), acc to SR EN 520+A1:2010
Thermal conductivity	0,23 W/mK, acc to SR EN 520+A1:2010

Declaration of the main product components and/or materials

Description of the main components and/or materials:

Product components	Weight (kg)	Post-consumer recycled material weight (%)	Biogenic material, weight-% and kg C/kg product
Gypsum (natural)	80 – 93%	-	-
Paper liner	3 – 5%	100%	0.124
Additives	1 – 5%	-	0.015
Sum	100%	3 – 5%	0.139

Packaging materials	Weight versus the product (%)	Weight biogenic carbon, kg C/kg product
Wooden pallet (culls)	0.3- 0.8%	0.001

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

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

LCA calculation information

TYPE OF EPD	Cradle to gate with options and optional modules (A+B+C+D)
DECLARED UNIT	1 m ² of installed board with a weight of 12.69kg/m ²
SYSTEM BOUNDARIES	Mandatory stages = A1-A3; C1-C4 and D; Optional stages = A4-A5; B1-B7
REFERENCE SERVICE LIFE (RSL)	The Reference Service Life (RSL) of the Gypsum product is 50 years. This 50-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.
CUT-OFF RULES	In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred. Flows related to human activities such as employee transport are excluded. The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.
ALLOCATIONS	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.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope: Europe Data is collected from one production site Saint-Gobain Construction Products RIGIPS located in Turda, Cluj county, Romania Data collected for the year 2023
BACKGROUND DATA SOURCE	The databases Sphera 2023.2 and ecoinvent v.3.9.1
SOFTWARE	Sphera LCA for experts (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	EU	EU	RO	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	-
Specific data used	>90% GWP-GHG																
Variation products	One product, one site																
Variation sites	One site																

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

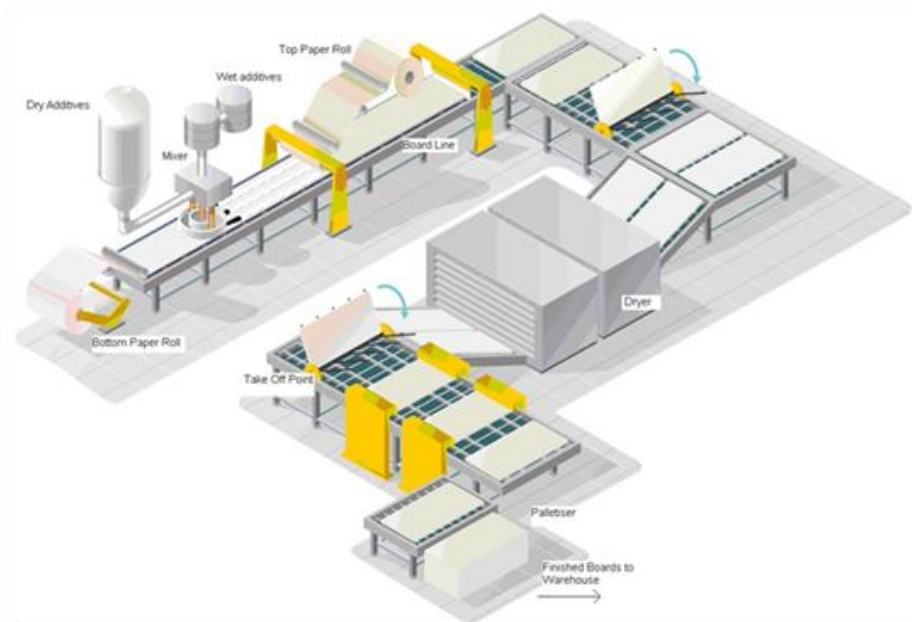
This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road, boat and/or train transportations.

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

System diagram:



Manufacturing in detail:

Rigips gypsum plasterboards are manufactured in a highly automated continuous process. Natural and recycled gypsum waste are milled and calcined in a hammer mill in order to produce plaster powder. Plaster powder (stucco), solid & liquid additives and pre-generated foam are mixed in a high-speed mixer to form homogeneous slurry. The slurry is then 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 sandwich passes through the extruder to be compressed to the specific thickness. At the end of forming belt, the mother board has a sufficient strength and is cut into panels of specific length. These boards are turned over, feed through a long multi-level dryer to evaporate excess water and get strength. The dried plasterboard is trimmed and bundled for shipment.

During 2023, the paper used in the production process of plasterboards was 100% recycled paper.

Starting Q1 2025 plasterboard products are using only paper certified (depending on the paper supplier certification):

- either FSC Recycled 100% or FSC Recycled Credit for bottom paper

- either FSC Recycled 100% or FSC Mix Credit for top paper

The factory ensures product traceability to the types of paper used in the manufacturing process.

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, real load is 24 t and consumption of 0.38 liters per km
Distance	366 km
Capacity utilisation (including empty returns)	75% (18% empty returns)
Bulk density of transported products*	846 kg/m ³
Volume capacity utilisation factor	1

A5. Installation in the building:

This module includes the parameters for installing the product at the building site. All installation materials and their waste processing are included.

PARAMETER	VALUE
Ancillary materials for installation (specified by materials)	Jointing compound 0.33 kg/m ² board, jointing tape 1.23m/m ² board, screws 8 units /m ² board
Water use	0.165 liters/m ²
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: 0.253kg / m ² (2% losses) Jointing Compound: 0.00985 kg / m ² Jointing Tape: 0.0246m / m ² Screws: 0.16units / m ²
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/ plaster : 100% landfilled 0% recycled Ancillaries: 100% landfilled Packaging : Carboard: 25% landfilled, 72% recycled, 3%incinerated Pallet: 53% landfilled, 45% recycled, 2%incinerated

Direct emissions to ambient air, soil, and water	None
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B1-B7. Use stage (excluding potential savings)

The use stage is divided into the following modules:

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

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

C1-C4. End of Life Stage

This stage includes the next modules:

C1: Deconstruction, demolition: The de-construction and/or dismantling of the product take part of the demolition of the entire building. In our case, the energy is considered is 0.05 MJ/m².

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	100% collected with mixed deconstruction and demolition waste sent to landfill (including board, screws and jointing tape/compound)
Recovery system specified by type	0 kg recycled
Disposal specified by type	12.69 kg to landfill
Assumptions for scenario development (e.g. transportation)	Gypsum waste is transported 50 km by truck from deconstruction/demolition sites to landfill

D. Reuse/recovery/recycling potential

There is no inclusion of secondary materials in the product.

100% of wastes are landfilled. There is no reuse, nor recycling, nor incineration with energy recovery for the for the product.

Considering all the above, no benefits or loads are reported on stage D.

LCA results

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 are from the ILCD. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant. Characterisation factors EN15804 based on EF 3.1.

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.

All emissions to air, water, and soil, and all materials and energy used have been included.

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain 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.

This EPD including module C, we strongly advise against using the results of modules A1-A3 without considering the results of module C.

Results refer to a declared unit of 1m² of installed gypsum board 15 mm with a weight of 12.69kg/m². The following results refer to a single product manufactured in a single plant Saint-Gobain Construction Products Romania, RIGIPS - Turda:

Environmental Impacts

		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
	Climate Change [kg CO2 eq.]	1.92E+00	3.02E-01	2.39E-01	0	0	0	0	0	0	0	5.82E-02	4.85E-02	0.00E+00	1.10E+00	-2.01E-02
	Climate Change (fossil) [kg CO2 eq.]	2.34E+00	2.98E-01	1.12E-01	0	0	0	0	0	0	0	5.82E-02	4.79E-02	0.00E+00	8.79E-02	-2.58E-02
	Climate Change (biogenic) [kg CO2 eq.]	-4.21E-01	7.77E-04	1.27E-01	0	0	0	0	0	0	0	7.34E-06	1.25E-04	0.00E+00	1.01E+00	4.58E-03
	Climate Change (land use change) [kg CO2 eq.]	5.02E-03	2.76E-03	2.07E-04	0	0	0	0	0	0	0	6.55E-06	4.43E-04	0.00E+00	7.01E-05	1.09E-03
	Ozone depletion [kg CFC-11 eq.]	8.64E-09	2.61E-14	2.48E-10	0	0	0	0	0	0	0	9.26E-10	4.19E-15	0.00E+00	2.33E-09	5.62E-09
	Acidification terrestrial and freshwater [Mole of H+ eq.]	2.71E-03	3.31E-04	2.37E-04	0	0	0	0	0	0	0	5.40E-04	5.51E-05	0.00E+00	6.92E-04	1.01E-03
	Eutrophication freshwater [kg P eq.]	2.48E-05	1.09E-06	6.26E-06	0	0	0	0	0	0	0	1.79E-06	1.74E-07	0.00E+00	6.77E-06	2.57E-04
	Eutrophication marine [kg N eq.]	1.12E-03	1.12E-04	1.13E-04	0	0	0	0	0	0	0	2.50E-04	1.90E-05	0.00E+00	8.47E-04	3.92E-04
	Eutrophication terrestrial [Mole of N eq.]	1.11E-02	1.33E-03	7.90E-04	0	0	0	0	0	0	0	2.72E-03	2.24E-04	0.00E+00	2.66E-03	2.74E-03
	Photochemical ozone formation - human health [kg NMVOC eq.]	2.63E-03	2.87E-04	2.57E-04	0	0	0	0	0	0	0	8.05E-04	4.79E-05	0.00E+00	1.11E-03	9.71E-04
	Resource use, mineral and metals [kg Sb eq.] ¹	6.37E-07	1.94E-08	6.93E-07	0	0	0	0	0	0	0	2.03E-08	3.11E-09	0.00E+00	1.30E-07	6.68E-07
	Resource use, energy carriers [MJ] ¹	3.80E+01	4.05E+00	1.49E+00	0	0	0	0	0	0	0	7.60E-01	6.51E-01	0.00E+00	2.11E+00	-7.66E-02
	Water deprivation potential [m³ world equiv.] ¹	5.56E-01	3.43E-03	4.58E-02	0	0	0	0	0	0	0	2.57E-03	5.51E-04	0.00E+00	9.39E-02	1.01E-01

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	1.44E+01	2.87E-01	8.66E-01	0	0	0	0	0	0	0	4.34E-03	4.60E-02	0.00E+00	4.84E-02	1.74E+00
 Primary energy resources used as raw materials (PERM) [MJ] ²	3.97E+00	0.00E+00	-2.68E-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] ²	1.64E+01	2.87E-01	5.58E-01	0	0	0	0	0	0	0	4.34E-03	4.60E-02	0.00E+00	4.84E-02	1.74E+00
 Use of non-renewable primary energy (PENRE) [MJ] ²	3.80E+01	4.06E+00	1.49E+00	0	0	0	0	0	0	0	7.60E-01	6.52E-01	0.00E+00	2.11E+00	-7.80E-02
 Non-renewable primary energy resources used as raw materials (PENRM) [MJ] ²	8.80E-02	0	1.60E-02	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	3.80E+01	4.061	1.51E+00	0	0	0	0	0	0	0	7.60E-01	6.52E-01	0.00E+00	2.11E+00	-7.54E-02
 Input of secondary material (SM) [kg]	3.41E-01	0	6.82E-03	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]	5.86E-25	0	1.17E-26	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]	6.888E-24	0	1.378E-25	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) [m3]	1.71E-02	3.16E-04	1.20E-03	0	0	0	0	0	0	0	5.98E-05	5.07E-05	0.00E+00	2.19E-03	-5.51E-04

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

Waste Category & Output flows

Waste Category & Output Flows	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
 Hazardous waste disposed (HWD) [kg]	5.06E-06	1.50E-11	3.69E-07	0	0	0	0	0	0	0	5.13E-06	2.41E-12	0.00E+00	1.05E-05	9.29E-06
 Non-hazardous waste disposed (NHWD) [kg]	1.23E-01	5.85E-04	3.76E-01	0	0	0	0	0	0	0	4.70E-03	9.40E-05	0.00E+00	1.35E+01	9.17E-02
 Radioactive waste disposed (RWD) [kg]	3.84E-04	5.25E-06	7.35E-06	0	0	0	0	0	0	0	8.35E-08	8.43E-07	0.00E+00	1.62E-06	-5.80E-05
 Components for re-use (CRU) [kg]	0.00E+00	0.00E+00	2.45E-02	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Materials for Recycling (MFR) [kg]	3.89E-01	0	7.78E-03	0	0	0	0	0	0	0	0	0	0.00E+00	0	0
 Material for Energy Recovery (MER) [kg]	0.00E+00	0	0.00E+00	0	0	0	0	0	0	0	0	0	0.00E+00	0	0
 Exported electrical energy (EEE) [MJ]	0.00E+00	0	0.00E+00	0	0	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0
 Exported thermal energy (EET) [MJ]	0.00E+00	0	0.00E+00	0	0	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0

Additional voluntary indicators from EN 15804

		PRODUCT STAGE	CONSTRUCTION STAGE	USE STAGE								END OF LIFE STAGE				REUSE, RECOVERY RECYCLING
Environmental indicators		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	GWP-GHG [kg CO2 eq.] ³	2.35E+00	3.01E-01	1.12E-01	0	0	0	0	0	0	0	5.82E-02	4.84E-02	0.00E+00	8.79E-02	-2.47E-02

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		A1 / A2 / A3
	Biogenic carbon content in product [kg]	1.63E-01
	Biogenic carbon content in packaging [kg]	1.16E-02

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

The product contains biogenic carbon due to the additives and paper liner used. Regarding packaging, biogenic carbon is quantified due to wooden pallets production.

Additional information:

Electricity information

The Saint-Gobain Construction Products Romania, RIGIPS factory based in Turda uses 33% from total need the following electricity description.

Parameter	Information
Location	Representative of Electricity purchased by Saint-Gobain Construction Products Romania
Geographical & technical representativeness	Share of energy sources
	Coal 17.05%
	Natural gas 17.36%
	Nuclear 20.09%
	Hydro 27.40%
	Wind, solar, etc. 17.20%
	Biofuels and waste 0.06%
	Oil 0.08%
	Biomass 0.75%
Reference year	2022
Type of dataset	Cradle to gate from Gabi and ecoinvent databases
Source	European Residual Mixes 2022 Association of Issuing Bodies
CO2 emission kg CO2 eq. / kWh	270.77 kg of CO2 eq/kWh

The Saint-Gobain Construction Products Romania, RIGIPS factory based in Turda uses electricity with Guarantee of Origin certificate (GO's).

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 67% of the electricity consumption on the manufacturing site.

Type of information	Description
Location	Electricity purchased by Saint-Gobain
Share of electricity covered by Guarantee of Origin	67% of the energy consumption is covered by the GO
Energy sources for electricity	Share of energy sources: Coal 0.063% Nuclear 8.963% Natural gas 0.075% Hydro 83.359% Wind 1.069% Biomass 0.006% Photovoltaic 6.466%
Type of dataset	Cradle to gate from GaBi and ecoinvent databases
Source	Cradle to gate from Gabi and ecoinvent databases Guarantee of Origin certificate: https://cdn.hidroelectrica.ro/cdn/eticheta_2023.png - 5 months

CO₂ emission kg CO₂ eq. / kWh 0.000811 kg of CO₂ eq/kWh
Climate Change - fossil 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 Saint-Gobain Construction Products Romania, RIGIPS, Turda. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects 2023 inventory data quality.

Environmental impacts according to EN 15804:2012 + A1

The following tables presents results for 1m² of installed gypsum board 15 mm with a weight of 12.69 kg/m².

	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
Environmental impacts															
Global Warming Potential (GWP) [kg CO ₂ eq.]	2.34E+00	2.98E-01	1.12E-01	0	0	0	0	0	0	0	5.82E-02	4.79E-02	0	8.79E-02	-2.58E-02
Ozone depletion (ODP) [kg CFC 11eq.]	-4.21E-01	7.77E-04	1.27E-01	0	0	0	0	0	0	0	7.34E-06	1.25E-04	0	1.01E+00	4.58E-03
Acidification potential (AP) [kg SO ₂ eq.]	5.02E-03	2.76E-03	2.07E-04	0	0	0	0	0	0	0	6.55E-06	4.43E-04	0	7.01E-05	1.09E-03
Eutrophication potential (EP) [kg (PO ₄) ₃ -eq.]	8.64E-09	2.61E-14	2.48E-10	0	0	0	0	0	0	0	9.26E-10	4.19E-15	0	2.33E-09	5.62E-09
Photochemical ozone creation (POCP) - [kg Ethylene eq.]	2.71E-03	3.31E-04	2.37E-04	0	0	0	0	0	0	0	5.40E-04	5.51E-05	0	6.92E-04	1.01E-03
Abiotic depletion potential for non-fossil resources (ADP-elements) [kg Sb eq.]	2.48E-05	1.09E-06	6.26E-06	0	0	0	0	0	0	0	1.79E-06	1.74E-07	0	6.77E-06	2.57E-04
Abiotic depletion potential for fossil resources (ADP-fossil fuels) [MJ]	1.12E-03	1.12E-04	1.13E-04	0	0	0	0	0	0	0	2.50E-04	1.90E-05	0	8.47E-04	3.92E-04

References

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4. The International EPD System PCR 2019:14 Construction products and Construction services. Version 1.3.2
5. c-PCR-031 Gypsum-based construction products (EN 17328) (PCR 2019:14-c-PCR-031 version: 2024-08-06)
6. European Chemical Agency, Candidate List of substances of very high concern for Authorization. <https://echa.europa.eu/candidate-list-table>
7. 2024.1 [Gypsum] LCA report template (PCR 1.3.2 EPD Int. System) RIGIPS Plasterboards