EPD®

THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with UNE-EN 15804:2012+A1:2013 and ISO 14025

Standard Plasterboard 12,5 mm

Date of issue: 2022-02-07
Revision date : 2022-02-23
Valid until: 2027-02-06
Version: 2
Scope of the EPD®: Europe

EPD VERIFIED

The environmental impacts of this product have been assessed over its whole life cycle. Its Environmental Product Declaration has been verified by an independent third party.

Registration number
The International EPD® System:
SP 05603

Placo SAINT-GOBAIN

Rigips SAINT-GOBAIN

General information

Manufacturer: Saint-Gobain Rigips Alçı San. Ve Tic. A.Ş
Programme used: International EPD System **http://www.environdec.com/**
EPD registration number/declaration number: SP 05603
PCR identification: UNE-EN 15804:2012+A1:2013 Sustainability of construction works – Environmental product declaration - core rules for the product category of construction product and The International EPD® System PCR 2012:01 version 2.34 for Construction products and Construction services.
Site of manufacture: Bala plant at Tol Mah. Tol Köyü Serpmeleri 133/A Bala Ankara, Turkey
Owner of the declaration: Saint-Gobain Placo Ibérica. Calle Príncipe de Vergara 132, 28002 Madrid
Product / product family name and manufacturer represented: Standard Plasterboard 8,3 kg/m^2 – 12,5 mm produced by Saint-Gobain Rigips Alçı San. Ve Tic. A.Ş in Bala
UN CPC code: 37530 Articles of plaster or of composition based on plaster
Declaration issued: 2022-02-07
Revision date: 2022-02-23
Valid until: 2027-02-06
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.
EPD Prepared by: LCA Central Team, Saint-Gobain.
Contact: Ayşe Tuğba Eren (tugba.eren@saint-gobain.com), Silvia Bailo Marco (silvia.bailo@saint-gobain.com), Sandra Perez Jimenez (Sandra.Perez-Jimenez@saint-gobain.com).

The Functional Unit is: 1m^2 of installed* plasterboard 12,5 mm with a weight of 8,3 kg/m^2 with a useful life of 50 years

*Installed in interior dry wall systems, suspended ceiling, partition wall and curtain wall applications

Declaration of Hazardous substances: (Candidate list of Substances of Very High Concern): none

Geographical scope of the EPD®: Europe

The intended use of this EPD is for B2B communication.

CEN standard UNE-EN 15804:2012+A1:2013 serves as the core PCR	
PCR:	PCR 2012:01 Construction products and Construction services, Version 2.34
PCR review was conducted by:	The Technical Committee of the International EPD® System. Chair: Massimo Marino. info@environdec.com
Independent verification of the declaration, according to EN ISO 14025:2010 **Internal ☐ External ☒**	
Third party verifier:	Marcel Gomez Ferrer Marcerl Gomez Consultoria Ambiental (www.marcelgomez.com) Phone: +34 630 64 35 93 Email: info@marcelgomez.com

Accredited or approved by	The International EPD System

Product description

Product description and use:
This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 m² of installed plasterboard 12,5 mm with a weight of 8,3 kg/m² and an expected average service life of 50 years.

Standard plasterboard – is a 12,5 mm thick plasterboard with a weight of 8,3 kg
Produced with high technology and covered with ivory on one side and gray on the other side, are the boards used to create dry wall systems such as suspended ceilings, partition walls and cladding walls indoors. It is used in interior dry wall systems, suspended ceiling, partition wall and curtain wall applications.

Technical data/physical characteristics:

EN CLASSIFICATION	A 12,5 mm
REACTION TO FIRE	A2 –S1,d0 (TS EN520+A1)
THERMAL CONDUCTIVITY	0,25 W/(m.K) (TS EN520+A1)

Description of the main components and/or materials for 1 m² of product for the calculation of the EPD®:

PARAMETER	VALUE
Quantity of board for 1 m² of product	8,3 kg of plasterboard
Thickness	12,5 mm of plasterboard
Surfacing	Paper top and bottom : 0,335 kg/m²
Packaging for the transportation and distribution	Wooden pallet 103 g/m² PET film: 5,0 g/m² Cardboard: 13,67 g/m²
Product used for the Installation	Jointing compound: 0,33 kg/m² Mixing water: 0,2 l/m² Screws: 0,015 kg/m² Jointing tape: 0,015 kg/m²

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 Gate with options Product-specific (one product, one manufacturing site)
FUNCTIONAL UNIT	1 m² of installed board with a weight of 8,3 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	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 criteria are based on mass. The polluter pays as well the modularity principles have been followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope includes: Europe Data is collected from one production site in Bala, Turkey, Saint-Gobain Rigips Alçı San. Ve Tic. A.Ş Data collected for the year 2020. Cradle to grave study. Background data: The databases, thinkstep 8.7 or ecoinvent v.3.6
PRODUCT CPC CODE	37530 Articles of plaster or of composition based on plaster

According to UNE-EN 15804:2012+A1:2013, EPDs of construction products may not be comparable if they do not comply with this standard. According to ISO 21930, EPDs might not be comparable if they are from different programmes.

Life cycle stages

Flow diagram of the Life Cycle

Product stage, A1-A3

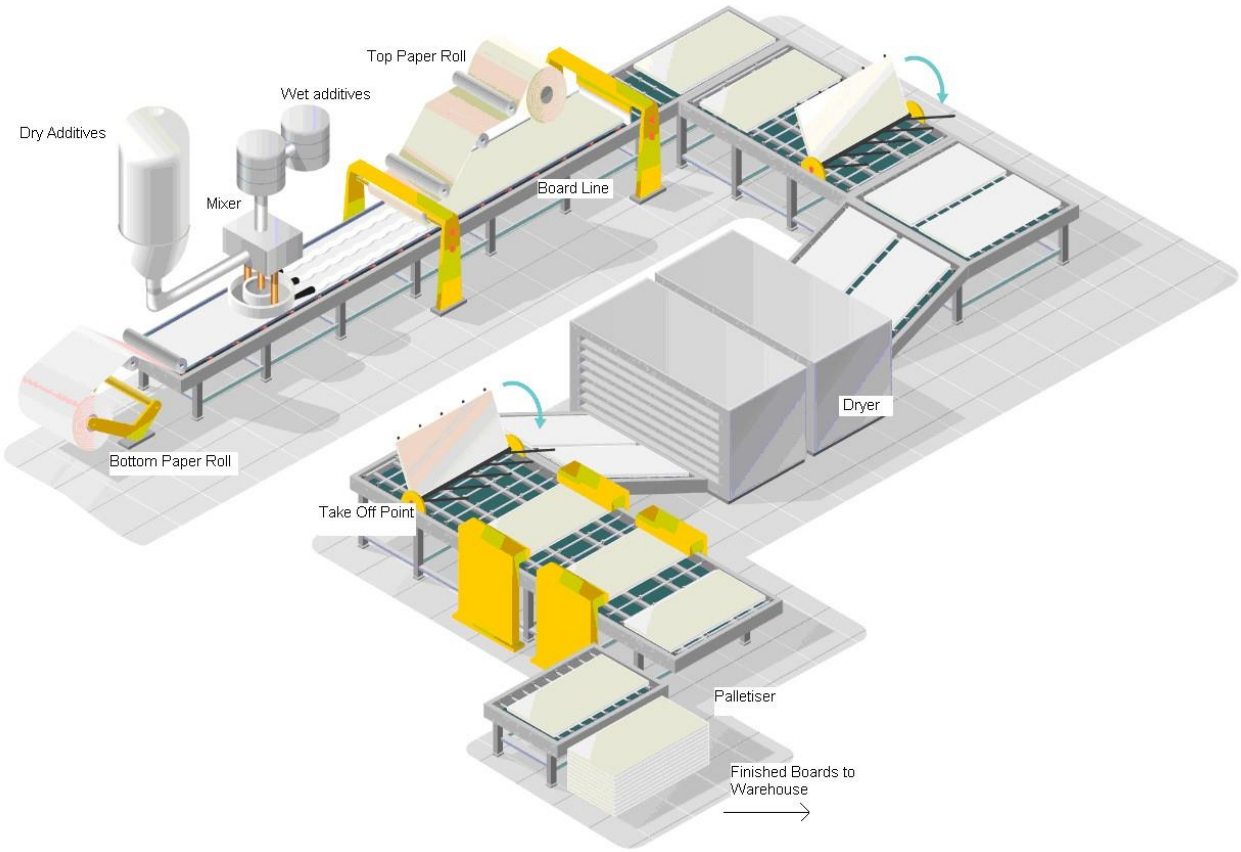
Description of the stage: the product stage of plaster products is subdivided into 3 modules A1, A2 and A3 respectively “Raw material supply”, “transport to manufacturer” and “manufacturing”.

A1, raw material supply.
This includes the extraction and processing of all raw materials and energy which occur upstream from the manufacturing process.

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

A3, manufacturing.
This module includes the manufacture of products and the manufacture of packaging. The production of packaging material is taken into account at this stage. The processing of any waste arising from this stage is also included.

Manufacturing process flow diagram



Manufacturing in detail:
The initial 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 (Representative as average for the European market).

Transport is calculated on the basis of 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.	Truck transportation: maximum load weight of 27 t and consumption of 0.38 liters per km Ship transportation : Container ship, 5,000 to 200,000 dwt payload capacity and consumption of 109 liters per km
Distance	1100 km by Truck 3000 km by Ship European distribution distance
Capacity utilisation (including empty returns)	85% (30% empty returns)
Bulk density of transported products	1 873 kg/m^3
Volume capacity utilisation factor	1

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 0.33kg Joining Tape 0.002125 kg Screws 0.015 kg
Water use	0,2 liters/m²
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)	Standard plasterboard: 0.365 kg (5 % of 8,3 kg) Screws : 0 kg Jointing Compound 0.0165 kg/m² Joining Tape 0,000106 kg/m² Wooden pallet 10,03 kg/m² PET film: 0,005 kg/m² Cardboard: 0,0136 kg/m²
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)	**The following wastes are landfilled** Standard plasterboard: 0.415 kg (5 % of 8,3 kg) Jointing Compound 0.0165 kg/m² Joining Tape 0,000106 kg/m² Wooden pallet 10,03 kg/m² **The following packaging wastes are recycled** PET film: 0,005 kg/m² Cardboard: 0,0136 kg/m²
Direct emissions to ambient air, soil and water	None

Use stage (excluding potential savings), B1-B7

Description of the stage:
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.

Maintenance:

PARAMETER	VALUE (expressed per functional unit)
Maintenance process	None required during product lifetime
Maintenance cycle	None required during product lifetime
Ancillary materials for maintenance (e.g. cleaning agent, specify materials)	None required during product lifetime
Wastage material during maintenance (specify materials)	None required during product lifetime
Net fresh water consumption during maintenance	None required during product lifetime
Energy input during maintenance (e.g. vacuum cleaning), energy carrier type, (e.g. electricity) and amount, if applicable and relevant	None required during product lifetime

Repair:

PARAMETER	VALUE (expressed per functional unit)
Repair process	None required during product lifetime
Inspection process	None required during product lifetime
Repair cycle	None required during product lifetime
Ancillary materials (e.g. lubricant, specify materials)	None required during product lifetime
Wastage material during repair (specify materials)	None required during product lifetime
Net fresh water consumption during repair	None required during product lifetime
Energy input during repair (e.g. crane activity), energy carrier type, (e.g. electricity) and amount if applicable and relevant	None required during product lifetime

Replacement:

PARAMETER	VALUE (expressed per functional unit)
Replacement cycle	None required during product lifetime
Energy input during replacement (e.g. crane activity), energy carrier type, (e.g. electricity) and amount if applicable and relevant	None required during product lifetime
Exchange of worn parts during the product's life cycle (e.g. zinc galvanized steel sheet), specify materials	None required during product lifetime

Refurbishment:

PARAMETER	VALUE (expressed per functional unit)
Refurbishment process	None required during product lifetime
Refurbishment cycle	None required during product lifetime
Material input for refurbishment (e.g. bricks), including ancillary materials for the refurbishment process (e.g. lubricant, specify materials)	None required during product lifetime
Wastage material during refurbishment (specify materials)	None required during product lifetime
Energy input during refurbishment (e.g. crane activity), energy carrier type, (e.g. electricity) and amount	None required during product lifetime
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants)	None required during product lifetime

Use of energy and water:

PARAMETER	VALUE (expressed per functional unit)
Ancillary materials specified by material	None required during product lifetime
Net fresh water consumption	None required during product lifetime
Type of energy carrier (e.g. electricity, natural gas, district heating)	None required during product lifetime
Power output of equipment	None required during product lifetime
Characteristic performance (e.g. energy efficiency, emissions, variation of performance with capacity utilisation etc.)	None required during product lifetime
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants)	None required during product lifetime

End-of-life stage C1-C4

Description of the stage: This stage includes the next modules:

C1, de-construction, demolition;
C2, transport to waste processing;
C3, waste processing for reuse, recovery and/or recycling;
C4, disposal, including provision and all transport, provision of all materials, products and related energy and water use.

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

PARAMETER	VALUE (expressed per functional unit)
Collection process specified by type	7,66 kg (board weight + ancillary) Collected with mixed de-construction and demolition waste to landfill
Recovery system specified by type	100 % (1 m2 of product to municipal landfill)
Disposal specified by type	7,66 kg to landfill
Assumptions for scenario development (e.g. transportation)	Average truck trailer with 27t payload, diesel consumption 38L/100km ; 45km distance to landfill

Reuse/recovery/recycling potential, D

100% of wastes are landfilled, so not recycling, recovery or reuse has been considered

LCA results

CML 2001 has been used as the impact model. Specific data has been supplied by the plant, and generic data come from GABI and Ecoinvent databases.
All emissions to air, water, and soil, and all materials and energy used have been included.

All figures refer to a functional unit of 1 m² of installed plasterboard 12,5 mm with a weight of 8,3 kg/m² and an expected average service life of 50 years.

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

Description of the system boundary (X = Included in LCA, MNA = Module Not Assessed)

	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	TR	TR	RER	RER	-	-	-	-	-	-	-	RER	RER	RER	RER	RER
Specific data used	>90% GWP- GHG					-	-	-	-	-	-	-	-	-	-	-	-
Variation products	One site one product					-	-	-	-	-	-	-	-	-	-	-	-
Variation sites	One site one product					-	-	-	-	-	-	-	-	-	-	-	-

ENVIRONMENTAL IMPACTS

Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D 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	
Global Warming Potential (GWP 100) - *kg CO_2 equiv/FU*	1,2E+00	6,7E-01	1,2E-01	0	0	0	0	0	0	0	3,4E-02	1,8E-02	0	1,2E-01	1,6E-02
	The global warming potential of a gas refers to the total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1.														
Ozone Depletion (ODP) *kg CFC 11 equiv/FU*	2,7E-08	9,6E-17	1,4E-09	0	0	0	0	0	0	0	4,6E-18	4,5E-18	0	6,7E-16	3,9E-13
	Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification potential (AP) *kg SO_2 equiv/FU*	3,5E-03	1,1E-02	3,3E-04	0	0	0	0	0	0	0	1,2E-04	7,4E-05	0	6,8E-04	1,2E-04
	Acid depositions have negative impacts on natural ecosystems and the man-made environment incl, buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication potential (EP) *kg $(PO_4)^{3-}$ equiv/FU*	3,5E-03	1,1E-02	3,3E-04	0	0	0	0	0	0	0	1,2E-04	7,4E-05	0	6,8E-04	1,2E-04
	Excessive enrichment of waters and continental surfaces with nutrients, and the associated adverse biological effects.														
Photochemical ozone creation (POPC) *kg Ethylene equiv/FU*	8,6E-05	5,6E-04	3,5E-05	0	0	0	0	0	0	0	7,9E-06	3,0E-06	0	5,6E-05	2,1E-05
	Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Abiotic depletion potential for non-fossil ressources (ADP-elements) - *kg Sb equiv/FU*	1,3E-06	7,7E-09	2,8E-06	0	0	0	0	0	0	0	8,3E-10	1,6E-09	0	4,1E-08	1,1E-08
Abiotic depletion potential for fossil ressources (ADP-fossil fuels) - *MJ/FU*	1,8E+01	9,0E+00	1,5E+00	0	0	0	0	0	0	0	4,2E-01	2,5E-01	0	1,6E+00	2,9E-01
	Consumption of non-renewable resources, thereby lowering their availability for future generations.														

RESOURCE USE

Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D 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	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials *MJ/FU*	1,35E+01	1,3E-01	1,2E+00	0	0	0	0	0	0	0	1,4E-03	1,5E-02	0	2,1E-01	1,2E+00
Use of renewable primary energy used as raw materials *MJ/FU*	5,46E+00	9,0E+00	1,6E+00	0	0	0	0	0	0	0	4,2E-01	2,5E-01	0	1,7E+00	2,3E-01
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) *MJ/FU*	1,89E+01	1,3E-01	1,2E+00	0	0	0	0	0	0	0	1,4E-03	1,5E-02	0	2,1E-01	1,2E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - *MJ/FU*	1,89E+01	9,0E+00	1,6E+00	0	0	0	0	0	0	0	4,2E-01	2,5E-01	0	1,7E+00	2,3E-01
Use of non-renewable primary energy used as raw materials *MJ/FU*	1,81E+00	0	8,6E-02	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - *MJ/FU*	1,62E+00	0	7,7E-02	0	0	0	0	0	0	0	0	0	0	0	0
Use of secondary material *kg/FU*	2,05E+01	9,0E+00	1,7E+00	0	0	0	0	0	0	0	4,2E-01	2,5E-01	0	1,7E+00	2,3E-01
Use of renewable secondary fuels- *MJ/FU*	1,20E-01	0	6,8E-03	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels - *MJ/FU*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water - *m^3/FU*	9,15E-03	5,5E-05	6,0E-04	0	0	0	0	0	0	0	2,5E-06	2,5E-05	0	4,2E-04	3,3E-04

WASTE CATEGORIES

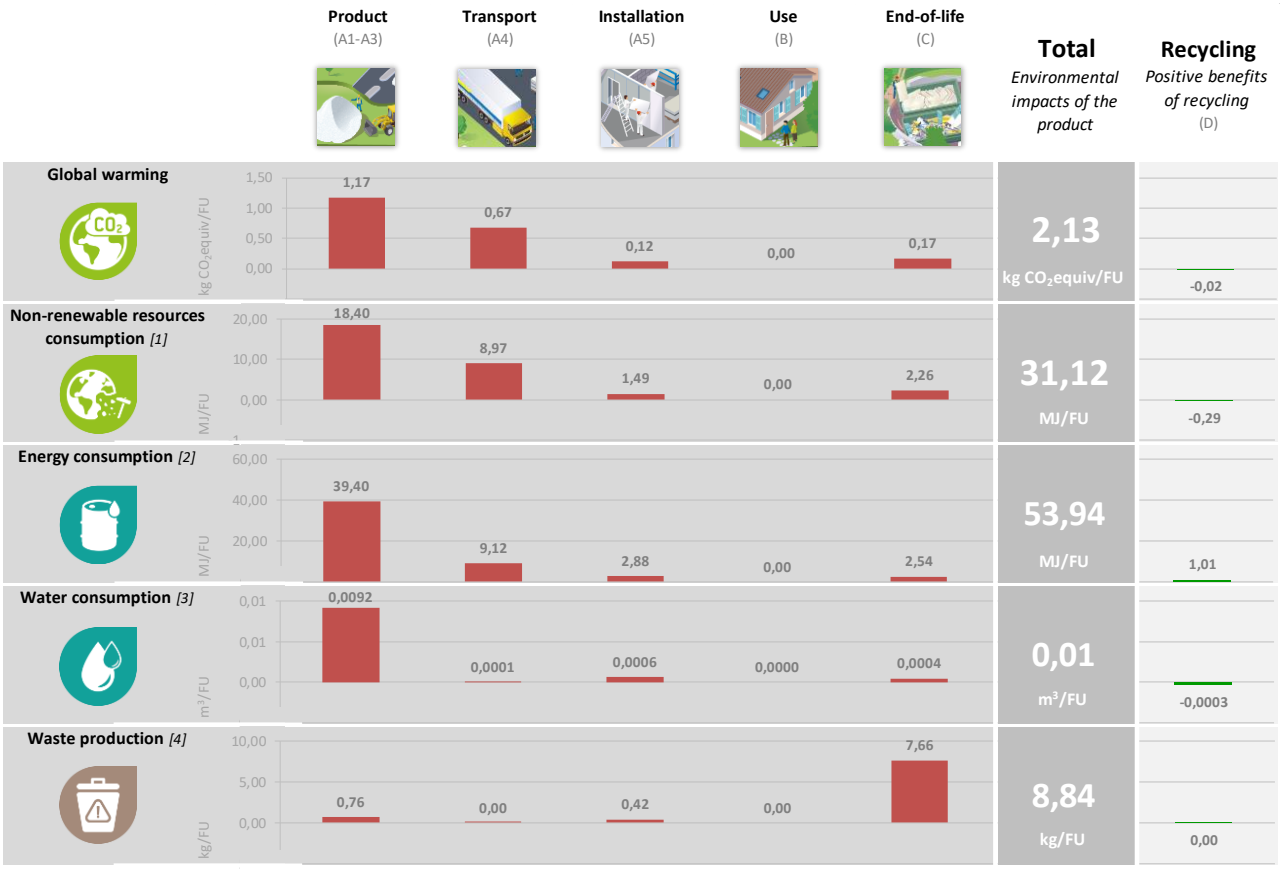
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed *kg/FU*	3,8E-07	1,9E-08	2,3E-08	0	0	0	0	0	0	0	5,2E-11	1,4E-08	0	2,8E-08	4,1E-09
Non-hazardous (excluding inert) waste disposed *kg/FU*	7,6E-01	9,5E-05	4,2E-01	0	0	0	0	0	0	0	6,2E-05	2,1E-05	0	7,7E+00	1,3E-03
Radioactive waste disposed *kg/FU*	1,6E-04	1,0E-05	2,5E-05	0	0	0	0	0	0	0	5,2E-07	5,1E-07	0	2,2E-05	2,2E-05

OUTPUT FLOWS

Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D 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	
Components for re-use *kg/FU*	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling *kg/FU*	0,00	0,00	0,16	0	0	0	0	0	0	0	0	0	0	0	0
Materials for energy recovery *kg/FU*	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, detailed by energy carrier *MJ/FU*	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0

LCA results interpretation

The following figure refers to a functional unit of 1 m² of installed plasterboard 12,5 mm with a weight of 8,3 kg/m² and for specific application of external building for an expected average service life of 50 years.



[1] This indicator corresponds to the abiotic depletion potential of fossil resources.
[2] This indicator corresponds to the total use of primary energy.
[3] This indicator corresponds to the use of net fresh water.
[4] This indicator corresponds to the sum of hazardous, non-hazardous and radioactive waste disposed.

Global Warming Potential (Climate Change) (GWP)
When analyzing the above figure for GWP, it can clearly be seen that the majority of contribution to this environmental impact is from the production modules (A1 – A3). This is primarily because the sources of greenhouse gas emissions are predominant in this part of the life cycle. CO2 is generated upstream from the production of electricity and is also released on site by the combustion of natural gas. We can see that other sections of the life cycle also contribute to the GWP; however, the production modules contribute to over 80% of the contribution. Combustion of fuel in transport vehicles will generate the second highest percentage of greenhouse gas emissions.

Non-renewable resources consumptions
We can see that the consumption of non – renewable resources is once more found to have the highest value in the production modules. This is because a large quantity of natural gas is consumed within the factory, and non – renewable fuels such as natural gas and coal are used to generate the large amount of electricity we use. The contribution to this impact from the other modules is very small and primarily due to the non – renewable resources consumed during transportation.

Energy Consumptions
As we can see, modules A1 – A3 have the highest contribution to total energy consumption. Energy in the form of electricity and natural gas is consumed in a vast quantity during the manufacture of plasterboard so we would expect the production modules to contribute the most to this impact category.

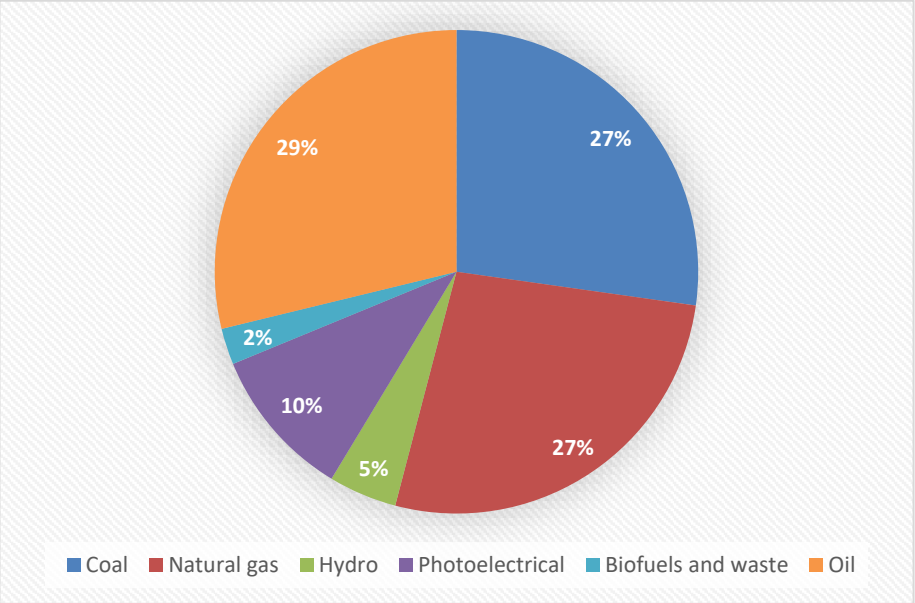
Water Consumption
Water is used within the manufacturing facility and therefore we see the highest contribution in the production phase. However, we recycle a lot of the water on site so the contribution is still relatively low. The second highest contribution occurs in the installation site due to the water used on the joint components.

Waste Production
Waste production does not follow the same trend as the above environmental impacts. The largest contributor is the end of life module. This is because the 85% of the product is assumed here to be sent to landfill once it reaches the end of life state.

Additional information

Electricity description

TYPE OF INFORMATION	DESCRIPTION
Location	Representative of Electricity purchased by Saint Gobain Rigips Alçı San. Ve Tic. A.Ş. Turkey
Geographical representativeness description	Coal 27% Natural gas 27% Hydro 5% Photoelectrical 10% Biofuels and waste 2% Oil 29%
Reference year	2020
Type of data set	Cradle to gate from Thinkstep database
Source	Gabi database 8.7 from International Energy Agency - 2020
CO_2 emission kg CO_2 eq. / kWh	0,821



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 Rigips Alçı San. Ve Tic. A.Ş. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects good inventory data quality.

Geographical rating	Temporal rating	Technology Rating	Total score (GR+TR+TeR)
3,6	2,0	2,0	7,6

Differences with previous versions of the EPD

The main change compared to previous version published at the date of 2022-02-07 is related to the correction of weight of the product and results associated.

References

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3. UNE-EN 15804:2012+A1:2013 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
4. ISO 21930:2007 Sustainability in building construction – Environmental declaration of building products
5. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and procedures
6. ISO 14040:2006 Environmental management. Life cycle assessment. Principles and framework
7. ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines
8. European Chemical Agency, Candidate List of substances of very high concern for Authorization. http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp