



ENVIRONMENTAL PRODUCT DECLARATION

Chapa Standard (ST) 12.5



In accordance with: ISO 14025, EN15804+A2:2019/AC:2021

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Product Category Rules:	PCR 2019:14. Construction products (EN 15804+A2) Version 2.0.1
Product group classification:	UN CPC 37530
Reference year for plant data:	2023
Geographical application scope:	South America

Product Category Rules (PCR)
CEN standard EN 15804+A2 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14. Construction products (EN 15804+A2) Version 2.0.1 Complementary product category rules (C-PCR) to PCR 2019:14: C-PCR-031. Gypsum-based construction products (EN 17328:2024) Version: 2024-08-06, UN CPC 37530.
PCR review was conducted by: The Technical Committee of the International EPD@ System <i>Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.envrondec.com/contact.</i>

Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006. <input type="checkbox"/> Individual EPD verification without a pre-verified LCA/EPD tool <input type="checkbox"/> Individual EPD verification with a pre-verified LCA/EPD tool <input checked="" type="checkbox"/> EPD process certification* without a pre-verified LCA/EPD tool <input type="checkbox"/> EPD process certification* with a pre-verified LCA/EPD tool <input type="checkbox"/> Fully pre-verified EPD tool
Third-party verification: <i>Bureau Veritas Certification Sweden AB with accreditation number 1236</i>
Third-party verifier is accredited by: <i>SWEDAC - Sverige AB 1236</i>
*EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com .
Procedure for follow-up of data during EPD validity involves third party verifier: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Version	Date	Reason
Original version of the EPD	2025-06-10	Initial Release

General information

Information about the company

Founded in 1932 by brothers Alfons and Karl Knauf in Iphofen, Germany, Gebr. Knauf Westdeutsche Gipswerk has grown into a global leader in high-quality building materials, specializing in gypsum products. Over the decades, the company has expanded its worldwide footprint, including significant growth in South America since 1998 through acquisitions in Argentina, Brazil, Chile, and Colombia, forming "Knauf South America."

With over 900 employees and operations spanning from gypsum quarries in Mendoza, Argentina, at 2,700 meters above sea level, to state-of-the-art production facilities in Cartagena, Colombia, Knauf South America combines local production with regional expansion. Its focus on dry construction systems enhances building comfort, safety, and quality across the region.

Knauf South America operates five quarries and the largest gypsum factory in the region, located in Luján de Cuyo, Argentina. It also runs seven training centers under the Knauf Akademie, offering free courses to advance expertise in dry construction technologies, empowering construction professionals to adopt innovative building solutions.



Queimados, Brazil

Brazil

Knauf began its operations in Brazil in 1997, initially importing Drywall systems produced in Europe. The following year, the company partnered with Senai to launch training courses for Drywall system installers, marking the start of its commitment to workforce development. In 2000, Knauf began local production at its Queimados plant in Rio de Janeiro, the first in Brazil to manufacture plasterboard and profiles. The facility expanded with additional production lines, reaching 25 million m² annually by 2011. In 2014, Knauf opened a second industrial park in Camaçari, Bahia, covering 157,000 m². The Camaçari plant began profile production in 2018 and is currently expanding its capacity.

Knauf's administrative offices are located in Rio de Janeiro, and the company employs over 280 people, most of whom work at the production plants. Knauf has also invested in professional training through its KnaufAkademia training centers, established in Camaçari, Queimados, São Paulo, and Belo Horizonte. Today, Knauf Brazil stands as the largest market in the region, supporting the growth of modern construction systems with high-quality local production and skilled talent development.

Name and location of production site:

The intended application of this product in the construction industry is within South America. The data utilized for the production stage life cycle assessment is related to production plant(s) located in Camaçari and Queimados, Brazil.

Product-related or management system-related certifications:

The sites are ISO 9001 and ISO 45001 certified.

Address:

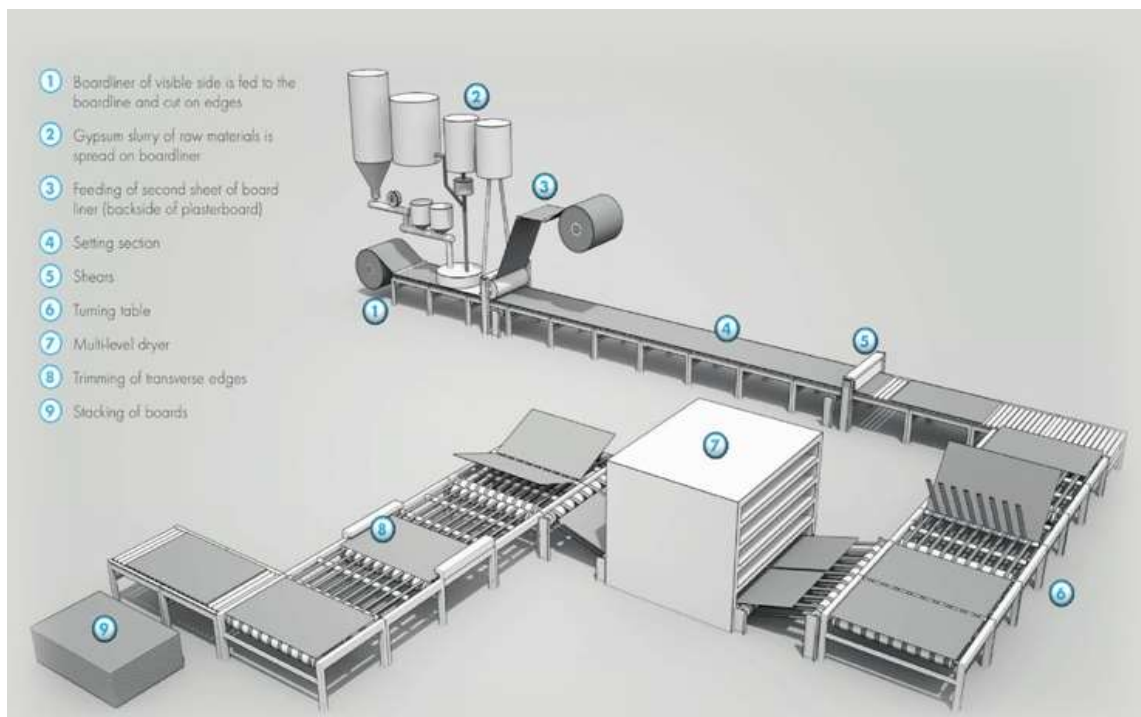
Camaçari: R. Nafta - Camaçari, BA – Brazil

Queimados: Rod. Pres. Dutra, 198 - 5 - Cidade Jardim Marajoara, Queimados - RJ, 26373-320 – Brazil

Information about gypsum plasterboard production

Production starts with raw materials mainly locally sourced, but some transported from other parts of the world.

To produce plasterboards, crushed gypsum is calcined to dehydrate the feedstock. The board components are suspended in silos in liquid phase and spread on a continuous sheet of board liner (visible face, lower layer). The liner is bend on the sides for edge shaping. The slurry is covered with a second sheet of board liner (back surface) in the forming station and the edges of the visible face board liner are flipped upwards. As the board moves down a conveyer line, the gypsum sets continuously. The hardened product reaches the shear, where automatic blades determine the length of the plasterboard. Then, plasterboards are dried in a multi-level dryer to the permitted residual moisture level. Drying is followed by the cutting of the boards to achieve a smooth termination. Finally, the plasterboards are pile into pallets and covered with a plastic protection.



Product information

Product name: Chapa Standard (ST) 12.5

Product identification: Chapa Standard (ST) 12.5 is a standard plasterboard consisting of gypsum mixture with additives at its core and a paper liner on each of its sides. The visible face is Ivory color, and the hidden face is grey. The plasterboards are thinned in the sides to facilitate installation.

Product description: The main application for Chapa Standard (ST) 12.5 is dry construction of interior walls and coverings in general purpose areas. It is used in any moisture-free area. This material is versatile and easy to install, it is flexible, which allows bending. The plasterboards are built according to the norm ABNT NBR 14715:2010.

Geographical scope: The manufacturing is done in Camaçari and Queimados, Brazil. Regarding the market area, the product is mainly marketed in South America.

Technical Characteristics:

Physical and Mechanical Parameters	Value	Unit
Thickness	12,5	mm
Weight	8,10	Kg/m ²
Minimum longitudinal resistance	550	N
Minimum transversal resistance	210	N
Maximum superficial hardness	20	mm
Specific Heat	1000	J/kg °K
Thermal Conductivity (UNE EN ISO 10456)	0,21	λ
Fire resistance	IIA	IT 10/2019 CB

Geometric Parameters	Value	Unit
Thickness variation	± 0,5	mm
Wide variation	+0/-0,4	mm
Length variation	+0/-0,5	mm
End squareness	Max 2,5	mm
Thinned edge: wide	40 - 80	mm
Thinned edge: depth	0,6 - 2,5	mm

UN CPC code:

37530: Articles of plaster or of compositions based on plaster.

LCA information

Functional unit / declared unit: The declared unit is 1m² of standard plasterboard Chapa Standard (ST) 12.5 with thickness 12,5mm.

Reference service life: The RSL of 50 years used in this analysis corresponds to the average life of plasterboards in general.

Time representativeness & Information on Specific Data:

Plant production data for the complete year 2023 is used. The product/group considered in this EPD is produced in Camaçari and Queimados, Brazil.

The data which is used to carry out the LCA calculations (for GWP-GHG, A1-A3) contains 77% specific data and 23% generic data. Data quality information used in this EPD is compliant with EN 15941. The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

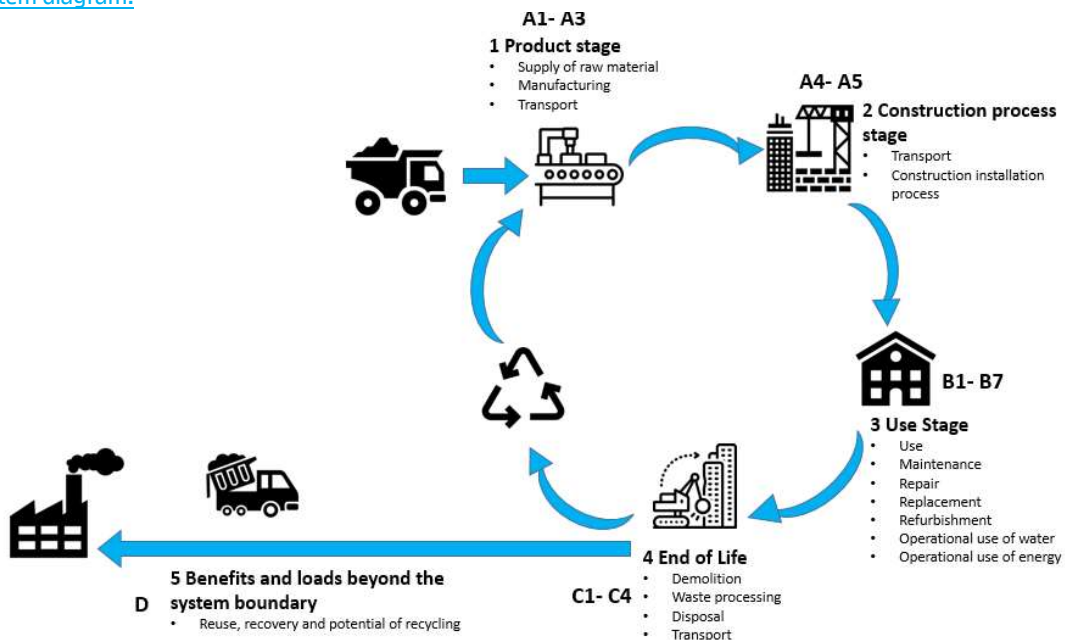
Database(s) and LCA software used:

The LCA model, the data aggregation and environmental impacts are calculated with the software LCA for Experts (GaBi) 10.8 and its content version 2024.2. The impact models used are those indicated in EN 15804:2012+A2:2019/AC:2021, version EF 3.1.

Energy information

Energy input for Brazil is selected. The emission of CO₂ is 0,014 kg per kWh for electricity (100% wind electricity) and 0,257 of CO₂ kg per kWh for heat produced with natural gas.

System diagram:



Description of system boundaries:

The system boundary of the EPD follows the modularity approach defined by the EN 15804:2012+A2:2019/AC:2021.

The type of EPD is cradle-to-grave.

For a comprehensive assessment, it is strongly recommended to consider the results from all the modules. Relying exclusively on Modules A1-A3 may lead to incomplete conclusions.

A comprehensive list and detailed explanations of each stage within the EPD are available as follows.

The product stage (A1-A3) includes:

- A1 – raw material extraction and processing, processing of secondary material input (e.g. recycling processes),
- A2 – transport to the manufacturer and
- A3 – manufacturing.

This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of-waste state or disposal of final residues during the product stage.

The LCA results are presented in an aggregated format for the product stage, where modules A1, A2, and A3 are consolidated into a single module, denoted as A1-A3.

Product Parameters	Value
Product weight	8,10 kg
Thickness	12,5 mm
Area	1 m ²
Packaging – HDPE	0,004 kg
Packaging – LDPE	0,003 kg
Packaging – Wood pallets	0,033 kg
Packaging - Cardboard	0,011 kg

The construction process stage includes:

- A4 – transport to the construction site and
- A5 – installation into the building.

The transport to the building site (A4) included in this LCA uses a standard distance of 100km by truck and ship. This facilitates the extrapolation of the results in A4 to the real distance. This consists of the following parameters:

Parameter	Value
Average transport distance (truck)	100 km
Type of fuel and vehicle used for transport (truck)	Truck Euro 4 (20-26 t / 17,3 t payload).
Truck capacity utilization rate (including 40% empty returns)	80 % of the weight capacity
Average transport distance (ship)	100 km
Type of ship used for transport	Container ship (43000 dwt payload capacity)
Loss of plasterboard on site	5%
Packaging – HDPE & LDPE	0 % recycled, 100 % incinerated
Packaging – Wood pallets	0 % recycled, 100 % incinerated

During the installation (A5) of plasterboard, screws, joint tape, fillers and water are generally used. The parameters below were considered.

Parameter	Value
Screws	12 – 0,024kg
Filler	0,33 kg
Joint tape	1,25 m – 0,06kg
Water	0,178 kg
Loss of ancillary materials on site	10%

The treatment and the transport of the packaging waste after the installation of the product (A5) has been considered.

The Use stage (B1-B7) includes:

- B1: Use
- B2: Maintenance
- B3: Repair
- B4: Replacement
- B5: Refurbishment
- B6: Operational Energy Use
- B7: Operational Water Use

Once installation is complete, no actions or technical operations are required during the use stages until the end of life. Therefore, the Chapa Standard (ST) 12.5 has no impact on this stage.

The end-of-life stage includes:

- C1 – de-construction, demolition,
- C2 – transport to waste processing,
- C3 – waste processing for reuse, recovery and/or recycling and
- C4 – disposal.

This includes provision of all transport, materials, products and related energy and water use.

Although gypsum products from Knauf are partly recycled at their end-of-life, an established collection system does not yet exist in all countries. Therefore, the assumption chosen in this study is the most conservative approach.

Parameter	Value
Energy consumption for demolition/deconstruction	1.1 kWh diesel/ton plasterboard
Disposal type	100 % incinerated for the paper liner; 100% landfilled for the gypsum 0 % recycled
Average transport distance waste (C2)	100 km
Type of vehicle used for transport.	Truck Euro 5 (20-26 t / 17,3 t payload).
Truck capacity utilization	80 % of the weight capacity

Module D includes reuse, recovery and/or recycling potential. According to EN 15804:2012+A2:2019 any declared benefits and loads from net flows leaving the product system not allocated as co-products and having

passed the end-of waste state shall be included in module D. The benefits considered in module D originate from packaging recycling or incineration.

Recycled material

The gypsum waste generated during the manufacturing process is recycled internally and fed back into the plasterboard production process.

Recycled content for the liner (cardboard) is 83%.

Cut-off rules and Additional information

All raw materials used in the manufacture of the declared product, the required energy, water consumption and the resulting emissions are considered in the LCA. As a result, recipe components with a share of less than 1% are included. All neglected processes contribute less than 5% to the total mass or less than 5% to the total energy consumption. For information, the impact of the gypsum plasterboard plant construction or manufacturing equipment is not taken into account in the life cycle assessment. Allocation criteria with by-products are based on cost.

The data collected at the level of the factory has been mass-allocated to the product under study.

Ancillary materials required for fixing and installation are included in the scope of this LCA. The impact of any additional construction products or materials not included in this EPD should be accounted for at building level.

Name and contact information of LCA practitioner:

CO₂ Logic (a South Pole company)
 Cantersteen 47
 1000 Brussels
 Belgium
 Contact: Simon Van Brussel - s.vanbrussel@southpole.com

Content Declaration

Product components	Weight %	Post-consumer recycled material % (out of total)	Biogenic material, kg C/component %	Biogenic material, kg C/product (out of total)
Gypsum	75-82	0	0	0
Water	12-20	0	0	0
Liner	4-6	83%	39,4	0,163
Additives	1-2	0	39-60	0,023
TOTAL	100%	-	-	0,186
Packaging Materials	Weight, kg/ DU or FU	Weight -% (versus the product with packaging)		Biogenic material, kg C/product (out of total)
Packaging - HDPE	0,004	0,05		0
Packaging - LDPE	0,003	0,04		0
Packaging - Wood pallets	0,033	0,40		0,013
Packaging - Cardboard	0,011	0,13		4,95E-03
TOTAL	0,051	0,63		0,018

The materials content can slightly vary from the need to regulate the production process.

[Declared Modules, geography, share of specific data \(in GWP-GHG indicator\) & data variation](#)

Life cycle stages and the description of the system boundaries for the reference product LCA (X = included in the LCA, MND = module is not declared)

Production stage			Construction stage		Use stage	End of life stage				Loads and benefits beyond the system boundary
A1	A2	A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
Raw Materials	Raw materials transport	Manufacturing	Delivery (transport)	Installation	Use Maintenance Repair Replacement Refurbishment Operational energy Operational water	Demolition or deconstruction	Transport to treatment site	Waste processing	Disposal	Future reuse, recycling or energy recovery potential
X	X	X	X	X	X	X	X	X	X	X
Rest of the world	Rest of the world	Brazil / rest of the world	Rest of the world	Rest of the world	Rest of the world	Rest of the world	Rest of the world	Rest of the world	Rest of the world	Rest of the world
Modules		A1-A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
Share of specific data	[specific data]%	77	-	-	-	-	-	-	-	-
Variation* - products	[product variation] %	-	-	-	-	-	-	-	-	-
Variation* - Sites	[site variation] %	-15%/+31%	-	-	-	-	-	-	-	-

*Variation regarding the average EPD result in terms of GWP-GHG indicator amongst products covered with this EPD

**Variation regarding the average EPD result in terms of GWP-GHG indicator

The result of the data quality assessment for 80% of the data is the following:

- Geographical representativeness: Good
- Technical representativeness: Good
- Technological representativeness: Very good

The grouping of the plasterboards for different sites is done by worst-case scenario for the raw and packaging materials (A1-A3).

According to PCR 2019:14 v2.0.0 infrastructure should be outside of the system boundary (except for energy). However, infrastructure impacts could have been considered in some LCA for experts background datasets.

Environmental performance

Potential environmental impacts: 1m² of plasterboard Chapa Standard (ST) 12.5 and weight of 8,10 kg

These results are representative of all the products mentioned in this EPD.

ENVIRONMENTAL IMPACTS										
Parameter	Unit	A1-3***	A4	A5	B1-B7	C1	C2	C3	C4	D**
GWP-tot	kg CO ₂ eq.	2,03E+00	7,53E-02	3,17E-01	0,00E+00	6,83E-03	6,77E-02	6,46E-04	6,73E-01	-3,07E-02
GWP-fossil	kg CO ₂ eq.	2,57E+00	6,74E-02	3,07E-01	0,00E+00	6,83E-03	5,97E-02	6,61E-04	6,54E-02	-3,07E-02
GWP-biogenic	kg CO ₂ eq.	-6,01E-01	3,11E-05	5,48E-03	0,00E+00	1,78E-06	3,42E-05	6,41E-09	6,07E-01	-2,69E-06
GWP-luluc	kg CO ₂ eq.	6,61E-02	7,87E-03	4,38E-03	0,00E+00	1,57E-06	7,96E-03	7,69E-07	3,00E-05	-2,20E-05
ODP	kg CFC 11 eq.	7,23E-08	1,20E-10	5,14E-09	0,00E+00	2,93E-10	4,52E-15	7,42E-12	1,58E-09	-1,81E-09
AP	mol H ⁺ eq.	1,79E-02	4,73E-04	2,86E-03	0,00E+00	6,43E-05	2,30E-04	6,63E-06	4,75E-04	-1,69E-04
EP-freshwater	kg P eq.	3,77E-04	9,05E-07	1,44E-04	0,00E+00	1,60E-07	6,48E-07	3,24E-07	8,15E-06	-2,27E-05
EP-marine	kg N eq.	6,04E-03	1,82E-04	6,47E-04	0,00E+00	3,08E-05	1,22E-04	1,54E-06	2,06E-04	-3,81E-05
EP-terrestrial	mol N eq.	5,33E-02	1,92E-03	5,34E-03	0,00E+00	3,36E-04	1,26E-03	1,73E-05	2,05E-03	-3,78E-04
POCP	kg NMVOC eq.	1,55E-02	4,05E-04	1,65E-03	0,00E+00	9,73E-05	2,24E-04	5,14E-06	6,71E-04	-1,55E-04
ADP-minerals&metals*	kg Sb eq.	1,75E-05	1,25E-08	1,51E-06	0,00E+00	2,32E-09	4,46E-09	3,44E-08	1,02E-07	-5,49E-07
ADP-fossil*	MJ	3,83E+01	8,97E-01	4,10E+00	0,00E+00	9,16E-02	8,06E-01	8,81E-03	1,32E+00	-4,46E-01
WDP*	m ³ world eq.	1,19E+00	6,60E-04	1,14E-01	0,00E+00	6,11E-04	3,42E-04	1,35E-04	6,27E-02	-8,90E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

* Disclaimer 2: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

** : [Life Cycle D stage covers benefits and loads beyond the system boundary stage (reuse, recovery and recycling potential) therefore, when summing up results, this stage should be considered separately].

*** The indicator's results are calculated using a reference product, with equal weighting between plants, if this is a single plant, it means 100% for that plant.

Potential environmental impact – additional mandatory and voluntary indicators

Indicator	Unit	Tot.A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-GHG [2]	kg CO ₂ eq.	2,64E+00	7,52E-02	3,11E-01	0,00E+00	6,83E-03	6,77E-02	6,61E-04	6,54E-02	-3,07E-02

[2] 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

Use of resources: 1m² of plasterboard Chapa Standard (ST) 12.5 and weight of 8,10 kg

These results are representative of all the products mentioned in this EPD.

RESOURCES USE										
Parameter	Unit	A1-3***	A4	A5	B1-B7	C1	C2	C3	C4	D*
PERE [3]	MJ	6,38E+00	8,76E-02	3,58E+00	0,00E+00	4,81E-04	8,79E-02	1,06E-03	6,88E+00	-3,27E-02
PERM [3]	MJ	7,09E+00	0,00E+00	1,25E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,86E+00	0,00E+00
PERT [3]	MJ	1,35E+01	8,76E-02	3,39E+00	0,00E+00	4,81E-04	8,79E-02	1,06E-03	1,44E-02	-3,27E-02
PENRE [3]	MJ	3,74E+01	8,97E-01	6,27E+00	0,00E+00	9,16E-02	8,06E-01	8,81E-03	1,91E+00	-4,46E-01
PENRM [3]	MJ	8,94E-01	0,00E+00	-2,58E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,91E-01	0,00E+00
PENRT [3]	MJ	3,83E+01	8,97E-01	4,10E+00	0,00E+00	9,16E-02	8,06E-01	8,81E-03	1,32E+00	-4,46E-01
SM	kg	3,52E-01	0,00E+00	1,76E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	2,81E-02	9,27E-05	2,69E-03	0,00E+00	1,42E-05	8,62E-05	3,14E-06	1,46E-03	-2,07E-04
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

*: [Life Cycle D stage covers benefits and loads beyond the system boundary stage (reuse, recovery and recycling potential) therefore, when summing up results, this stage should be considered separately].

*** The indicator's results are calculated using a reference product, with equal weighting between plants, if this is a single plant, it means 100% for that plant.

[3] From International EPD PCR 2.0.0. for Construction Products, the option B, mentioned in Annex 3, was used for the calculation if the primary energy use indicators.

Waste production and output flows: 1m² of plasterboard Chapa Standard (ST) 12.5 and weight of 8,10 kg

These results are representative of all the products mentioned in this EPD.

OUTPUT FLOWS AND WASTE CATEGORIES										
Parameter	Unit	A1-3***	A4	A5	B1-B7	C1	C2	C3	C4	D*
Hazardous waste disposed	kg	4,99E-02	1,06E-04	2,73E-02	0,00E+00	6,97E-05	3,66E-11	4,03E-05	1,54E-02	0,00E+00
Non-hazardous waste disposed	kg	1,24E-02	1,33E-04	6,56E-01	0,00E+00	0,00E+00	1,34E-04	0,00E+00	8,19E+00	-5,85E-02
Radioactive waste disposed	kg	3,65E-05	6,92E-07	6,88E-06	0,00E+00	1,92E-08	6,62E-07	2,15E-08	7,61E-07	-2,94E-06
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,14E-02	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

*: [Life Cycle D stage covers benefits and loads beyond the system boundary stage (reuse, recovery and recycling potential) therefore, when summing up results, this stage should be considered separately].

*** The indicator's results are calculated using a reference product, with equal weighting between plants, if this is a single plant, it means 100% for that plant.

Additional impact categories and indicators: 1m² of plasterboard Chapa Standard (ST) 12.5 and weight of 8,10 kg

These results are representative of all the products mentioned in this EPD.

ADDITIONAL IMPACT CATEGORIES AND INDICATORS										
Parameter	Unit	A1-3****	A4	A5	B1-B7	C1	C2	C3	C4	D***
PM	Disease Incidence	7,22E-08	1,74E-09	1,56E-08	0,00E+00	1,85E-09	1,52E-09	8,94E-11	8,67E-09	-3,09E-09
IRP*	kBq U235 eq.	4,15E-02	1,05E-04	8,16E-03	0,00E+00	2,45E-05	5,88E-05	2,64E-05	9,19E-04	-1,71E-03
ETP-fw**	CTUe	2,08E+01	1,41E+00	3,96E+00	0,00E+00	1,13E-02	1,41E+00	5,70E-03	4,17E-01	-2,26E-01
HTP-c**	CTUh	1,49E-08	5,78E-11	6,26E-09	0,00E+00	2,58E-11	2,16E-11	5,00E-12	3,91E-10	-2,91E-10
HTP-nc**	CTUh	2,03E-08	3,61E-10	3,83E-09	0,00E+00	1,34E-11	3,34E-10	3,10E-11	2,06E-09	-3,06E-09
SQP**	dimensionless	3,90E+01	8,71E-01	1,78E+01	0,00E+00	3,37E-03	8,74E-01	1,40E-02	2,40E+00	-1,25E-01
Acronyms	PM = Particulate matter emissions; IRP= Ionising radiation, human health; ETP-fw: Ecotoxicity (freshwater); ETP-c: Human toxicity, cancer effects; HTP-nc: Human toxicity, non-cancer effects; SQP: Land use related impacts / soil quality									

* Disclaimer 1: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

** Disclaimer 2: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

***: [Life Cycle D stage covers benefits and loads beyond the system boundary stage (reuse, recovery and recycling potential) therefore, when summing up results, this stage should be considered separately].

**** The indicator's results are calculated using a reference product, with equal weighting between plants, if this is a single plant, it means 100% for that plant.

Note: The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins and/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). Environmental impacts from the product's full life cycle must be evaluated to ensure a comprehensive understanding.



[Information on biogenic carbon content](#)



Results per functional or declared unit		
BIOGENIC CARBON CONTENT	kg C	kg CO ₂ eq.
Biogenic carbon content in product	0,186	0,682
Biogenic carbon content in packaging	0,018	0,066

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

LCA interpretation

ENVIRONMENTAL IMPACTS

The main impact categories were determined based on the single score (EF3.1 methodology). The most relevant indicators to analyse are the following:

The Global Warming Potential (GWP-total) dominated by the production (A3), mostly due to energy consumption for heating, the transport (A2) and the disposal (C4). This last module is mostly driven by the biogenic carbon release of the paper liner at the end of life of the plasterboard.

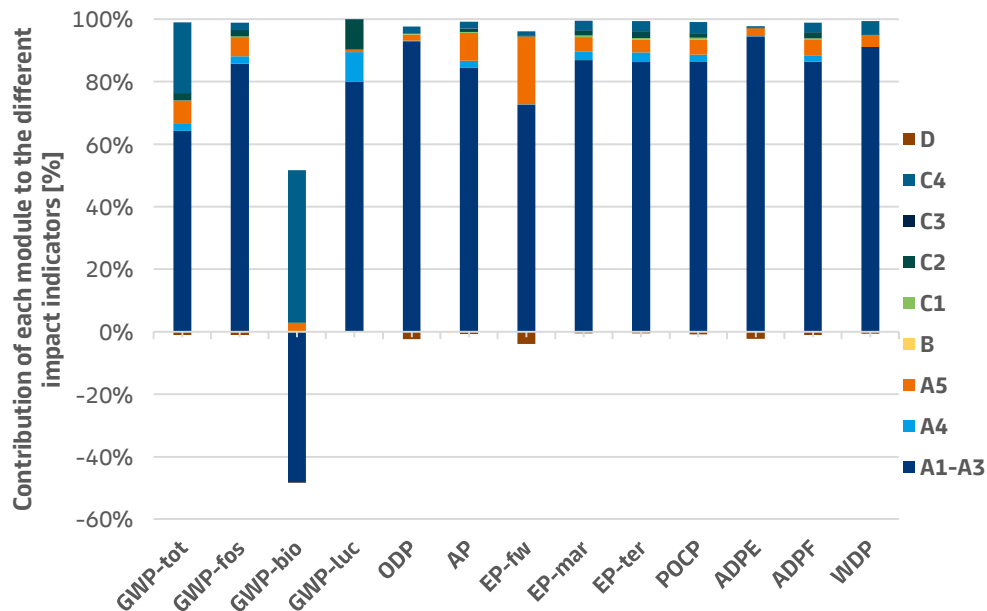
The Abiotic Depletion Potential for Fossil Resources Potential (ADP-fossil) is dominated by energy consumption for the production (A3). The transport (A2) has a non-negligible contribution to the impact of this indicator.

The Acidification Potential (AP) is dominated by the transport (A2 and A4) and the use of raw materials (A1).

The Abiotic Depletion Potential for Non-Fossil Resources (ADP- minerals & metals) is dominated by emissions from the raw materials followed by the production (A3).

The Formation Potential of Tropospheric Ozone (POCP) is mostly driven by the transportation (A2 and A4), the production (A3, mostly natural gas) and the raw materials (A1, mostly paper liner).

The Terrestrial eutrophication potential (EP-ter) is dominated by transport (A2 and A4) and raw materials (A1).



RESOURCES USE

Total Use of Non-Renewable Primary Energy Resources (PENRT) is dominated by the production of plasterboard products (especially due to the energy consumption) and with little influence of distribution transport and raw materials.

Total Use of Renewable Primary Energy Resources (PERT) is dominated by the use of raw materials at the start of the life cycle (A1) and at the production of plasterboard (A3).

For **the Use of Secondary Material (SM)**, almost all of it comes from the paper liner in A1.

The **Use of freshwater (FW)** is mostly driven by the water used in the extraction and production of raw materials (A1).

Abbreviations

ADP	Abiotic Depletion Potential
AP	Acidification Potential
CEN	European Committee for Standardization
CO ₂	Carbon dioxide
CPC	Central product classification
CPR	Construction product regulation
c-PCR	Complementary product category rules
EP	Eutrophication potential
EPD	Environmental product declaration
EU	European Union
FU	Functional Unit
FW	Fresh Water
GHG	Greenhouse gas
GPI	General programme instructions
GWP	Global warming potential
HTP	High Temperature Plastics
HTP	Human Toxicity Potential
IRP	Ionising radiation Potential
ISO	International Organization for Standardization
LCA	Life cycle assessment
LDPE	Low density Polyethylene
NRSF	Use of non-renewable secondary fuels
ODP	Depletion potential of the stratospheric ozone layer
PCR	Product category rules
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
PENRM	Use of non-renewable primary energy resources used as raw materials
PENRT	Total use of non-renewable primary energy re-sources
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials
PERM	Use of renewable primary energy resources used as raw materials
PERT	Total use of renewable primary energy resources
PM	Particulate Material
POCP	Potential of Tropospheric Ozone
RSF	Use of renewable secondary fuels
RSL	Reference Service Life
SM	Use of secondary material
SQP	Soil Quality Potential
UN	United Nations
WDP	Water Deprivation Potential

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EN 15804:2012+A2:2019/AC:2021

EN 15804:2012+A2:2019/AC:2021: Sustainability of construction works – Environmental Product Declarations – Core rules for the product category of construction products





EN 15941:2024

Sustainability of construction works – Data quality for environmental assessment of products and construction work – Selection and use of data

Background report – Knauf LATAM EPDs (Background Report)

Calculation rules for the Life Cycle Assessment and Requirements and more details about the production on the Background Report.

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