

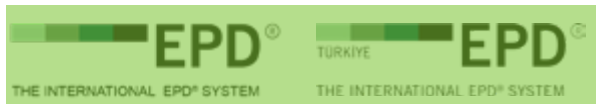
KNAUF

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

Standard Plasterboards (12,5 mm) from Knauf A.Ş

Environmental Product Declaration

Programme: The International EPD® System
Programme Operator: EPD International AB
EPD Registration Number: EPD-IES-0004546
Publication Date: 2024-07-19
Validity Date: 2029-07-18
Geographical Scope: Global



Build on us.

This EPD covers multiple products, based on worst-case results.

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. The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

How to read this EPD?

An Environmental Product Declaration (EPD) is an ISO Type III Environmental Declaration based on ISO 14025 standard. An EPD transparently reports the environmental performance of products or services from a lifecycle perspective. The preparation of an EPD includes different stages, from acquiring raw materials to the end of life of the final product/service. EPDs are based on international standards and consider the entire value chain. Additionally, EPD is a third-party verified document. This EPD includes several sections described below.

1. General and Program Information

The first part of an EPD has information about the name of the manufacturer and product/service and other general information such as the validity and expiration dates of the document, the name of the program operator, geographical scope, etc. The second page states the standards followed and gives information about the program operator, third-party verifier, etc. The followed Product Category Rule (PCR) is indicated on the second page.

2. Company and Product/Service Information

Information about the company and the investigated product is given in this section. It summarizes the characteristics of the product provided by the manufacturer. It also includes information about the product such as product composition and packaging.

3. LCA Information

LCA information is one of the most important parts of the EPD as it describes the functional/ declared unit, time representativeness of the study, database(s) and LCA software, along with system boundaries.

The table presented in this part has columns for each stage in the life cycle. The considered stages are marked 'X' whereas the ones that are not declared are labeled as 'ND'. Not all EPDs consider the full life cycle assessment for a product's entire life stages. The 'System Boundary' page is also the place where one can find detailed information about the stages and the assumptions made.

4. LCA Results

The results of the Life Cycle Assessment analysis are presented in table format. The first column in each table indicates the name of the impact category and their measurement units are presented in the second column. These tables show an amount at each life cycle stage to see the impact of different indicators on different stages. Each impact can be understood as what is released through the production of the declared unit of the material—in this case, 1 m² plasterboard production. The benefits of reuse/recycling of the declared product is reflected in this section.

The first impact in the table is global warming potential (GWP), which shows how much CO₂ is released at each stage. Other impacts include eutrophication potential, acidification potential, ozone layer depletion, land use related impacts, etc. The second table provides results for resource use and the third table is about the waste produced during the production. The fourth and final table shows the results for the GWP-GHG indicator, which is almost equivalent to the GWP-Total indicator mentioned previously. The only difference is that this indicator excludes the biogenic carbon content by following a certain methodology.

Programme Information

The International EPD® System: EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden,
info@environdec.com

PCR 2019:14 Construction products, version 1.3.3., Construction EN 15804:2012+A2:2019/AC:2021 Sustainability of Construction Works

Technical Committee of the International EPD® System. Review chair: Claudia A. Peña, University of Concepción, Chile.

The review panel may be contacted via the Secretariat www.environdec.com/contact.

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

EPD process certification EPD verification ☒

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via EPD verification by individual verifier

Third Party Verifier: Stephen Forson, ViridisPride

Approved by: The International EPD® System Technical Committee supported by the Secretariat

Procedure for follow-up of data during EPD validity involves third party verifier:

☒ Yes

☒ No ☒

Life Cycle Assessment (LCA)

LCA Practitioner: Orhan Atacan MSC MBA, Metsims Sustainability Consulting

EPDs within the same product category but registered in different EPD programmes 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 cutoff rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

About the Company

Owner of the EPD: Knauf A.Ş.,

Moment Beştepe / Beştepe Mah. 32. Cad. No:1 Kat:14 / No: 212-218 06560 Beştepe-Yenimahalle / Ankara

Production Plants: Ahiboz Plant (Ankara, Türkiye) and İzmit Plant (İzmit, Türkiye)

Knauf is one of the world's leading manufacturers of modern insulation materials, dry lining systems, plasters and accessories, thermal insulation composite systems, paints, floor screed, floor systems, and construction equipment and tools. With 250 production facilities and sales organizations in over 90 countries, 35000 employees worldwide, the Knauf Group is without doubt one of the big players on the market – in Europe, the USA, South America, Russia, Asia, Africa, and Australia.

Specifically the family company was established in 1932, when brothers Alfons and Karl Knauf secured the mining rights to gypsum deposits in the Schengen community (Obermosel) in Germany. Courage, determination, and business savvy were the reasons that only a year later Knauf established its first gypsum factory in Perl (Moselle) – laying the foundation for what would later be the Knauf Group.

The story of the company in Turkey began in 1989, as Biltepe AŞ, starting production in Ankara plant as the first gypsum board factory of Turkey. In the second half of 1997, the firm engaged in a merger with Knauf, a world leader in this field. From 2000 on, the investments proceeded under 100% Knauf ownership. That very year also marked the opening of the second gypsum board factory in İzmit, Turkey, followed by a third plant again in İzmit. One of the largest plants of Europe, Knauf's fourth plant in Turkey, the Ahiboz, Ankara factory began production in 2009.

The company have Quality Management System - ISO 9001, Occupational Health and Management System - ISO 45001, and Environmental Management System - ISO 14001.



About the Products

Product Group Name:

Standard Plasterboard, This EPD covers the product group. The EPD is based on the worst-case approach according to environmental impacts. The criterion for defining the worst-case product is mainly based on the declared environmental performance indicator.

Product group description:

The declared plasterboards consist of a gypsum core and a boardliner wrapping the gypsum core. The gypsum core also contains additives. These products are used for installing partition walls, drywall lining, shaft wall and suspended ceiling systems in interiors.

The products UN CPC code is 37530.

Included products and production sites:

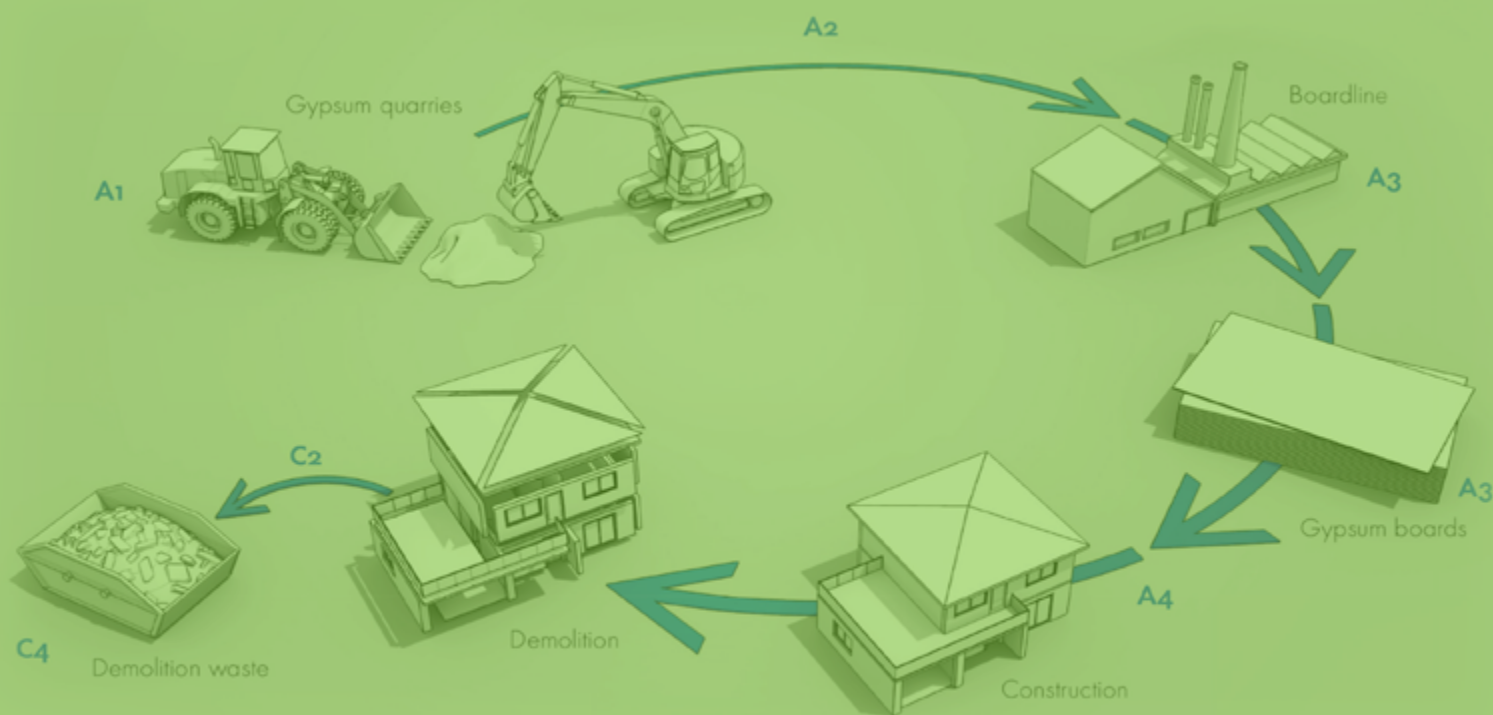
Product	Production Plant	Weight (kg/m ²)	Application Area	System
FX Alçıpan® 12,5mm	Ahiboz	7,5-8 kg	Standard drywall application with no special requirements	Partition wall, suspended ceiling, wall cladding
FX Alçıpan® 12,5mm	İzmit	7,5-8 kg	Standard drywall application with no special requirements	Partition wall, suspended ceiling, wall cladding
Suya Dayanıklı Alçıpan® WR 12,5mm	Ahiboz	8-8,5 kg	Drywall application in wet rooms such as domestic bathroom, kitchen etc.	Partition wall, suspended ceiling, wall cladding
Suya Dayanıklı Alçıpan® WR 12,5mm	İzmit	8-8,5 kg	Drywall application in wet rooms such as domestic bathroom, kitchen etc.	Partition wall, suspended ceiling, wall cladding
Flex Easy Alçıpan®	Ahiboz	6,6 kg	Standard drywall application with no special requirements	Suspended ceiling

Technical Specifications

Product	Standard	Board Type	Reaction to Fire	Thermal conductivity λ (W/(m·K))	Water absorption (g/m ²)
FX Alçıpan®	TS EN 520 + A1	A	A2-s1,d0	0,25	-
Suya Dayanıklı Alçıpan® WR	TS EN 520 + A1	H	A2-s1,d0	0,25	≤ 220
Flex Easy Alçıpan®	TS EN 520 + A1	A	A2-s1,d0	0,25	-

For more information about the product, please visit [here](#).

System Boundary



A1 - Raw Material Supply

Production starts with raw materials mainly locally sourced, but some transported from other parts of the world. 'Raw material supply' includes raw material extraction and pre-treatment processes before production. The stage covers the supply (quarrying) and production of all components and additives. The use of electricity, fuel and auxiliary materials in production is also taken into account.

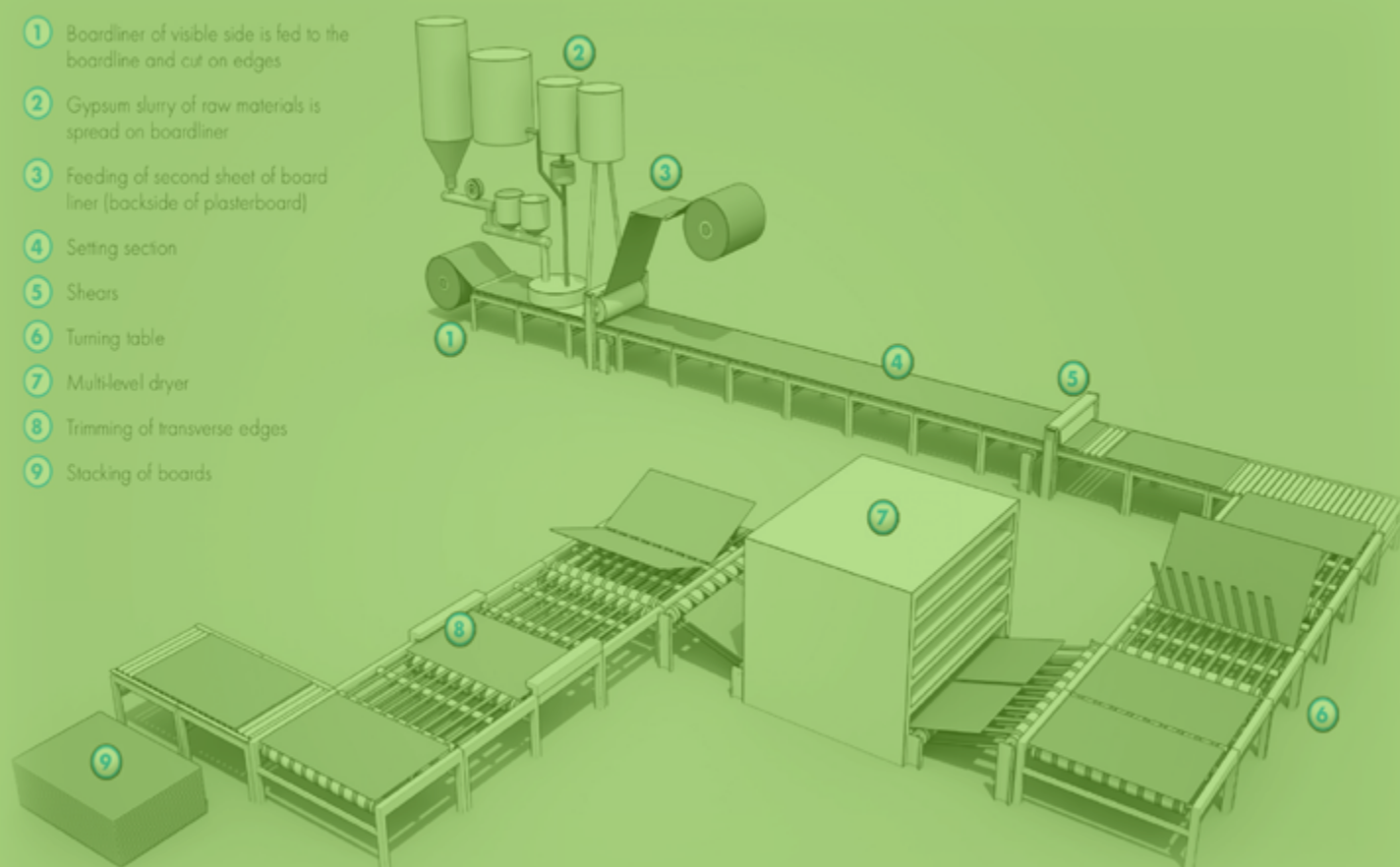
A2 - Raw Material Transport

Raw material transport from supplier to manufacturer is considered in raw material supply stage. The distances and routes are calculated accordingly. Depending the manufacturer, locally supplied steel is transported via trucks and other supplies come through seaway.

Transport Mode	Type
Road	Vehicle: Lorry Size Class: >32 metric ton Emission Standard: EURO5 Fuel Type: Diesel
Sea	Vehicle: Container Ship DWT (Load Capacity): 43000 tonnes Fuel Type: Heavy Fuel Oil

A3 - Manufacturing

The components of Knauf plaster boards are suspended in silos in liquid phase and spread on a continuous sheet of board liner (visible face, lower layer). The board liner is cut 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. On the subsequent board liner the gypsum sets continuously and is dried in a multi-level drier to the permitted residual moisture level. Drying is followed by the cutting of the boards to the desired lengths. (See also figure below)



Electric and natural gas are consumed during the manufacturing.

Information	Description
Electricity Data	Türkiye electricity grid mix from Ecoinvent, Medium Voltage
Type of dataset	Cradle to gate
GWP of Electricity Data	0,578 kg CO ₂ eq./kWh

A4 - Product Transport

Product transport from manufacturer to customer is considered in product material supply stage. The distances and routes are calculated accordingly. Depending the customer location, product is transported via trucks and other supplies come through seaway.

Transport Mode	Type
Road	Vehicle: Lorry Size Class: >32 metric ton Emission Standard: EURO5 Fuel Type: Diesel
Sea	Vehicle: Container Ship DWT (Load Capacity): 43000 tonnes Fuel Type: Heavy Fuel Oil

A5 - Installation

During the installation of plasterboard, mortar, screws and steel profiles are generally used. The materials used depend on the surface area and the application method. It can also be used directly. This study considered no material or energy consumption during the usage phase.

Additionally, the treatment of the packaging waste after the installation of the product has been considered in installation stage. It is presumed that all waste gypsum board stripes are disposed of in landfills.

B1-B7 - THE USE STAGE

The use stage consist of seven stages as, B1: Use, B2: Maintenance, B3: Repair, B4: Replacement, B5: Refurbishment, B6: Operational Energy Use, B7: Operational Water Use. No material and energy or technical operations are required during the use stages until the end of life. Therefore, the product has no impact on this stage.

C1 - Deconstruction / Demolition

The deconstruction and demolition of the product takes place with the demolition of the whole building. It is assumed that energy for the binder is minor compared to the other materials of the building, thus the environmental impact of this module is set to be zero.

C2 - Waste Transport

A distance of 100 km by lorry 16-32 tonnes from construction/demolition sites to disposal sites has been chosen as a conservative assumption.

Parameter	Value
Vehicle Type	Vehicle: Lorry Size Class: 16-32 metric ton Emission Standard: EURO4 Fuel Type: Diesel
Distance	100 km

C3 - Waste Processing

It is assumed that gypsum products will be 100% landfilled after its life cycle, thus the environmental impact of this module is set to be zero.

C4 - Disposal

All plasters end up at construction and demolition waste landfills as their final fate and modelled as such in the LCA.

D - Benefits

No potential benefits of recycling and re-use were taken into account. Only the benefit due to the recycling of the packaging has been calculated.



LCA Information

Functional Unit: 1 m² of plasterboard with thickness 12,5 mm. The product weights vary and the weights of the products are provided in the technical specifications table.

Time Representativeness: 2023 (12 months)

Database(s) and LCA Software: Ecoinvent 3.9.1 and SimaPro 9.5

System Boundaries: Cradle to grave and module D (A + B + C + D). Human activities such as employee transportation and infrastructure of the production site are excluded.

Reference Service Life: Since there are no influences on ageing of the gypsum boards during use following the rules of engineering. According to /BBSR2017/ a service life of at least 50 years can be considered for gypsum plasterboards in general.

	Product Stage			Construction Process Stage		Use Stage							End of Life Stage				Benefits and Loads
	Raw Material Supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-construction	Transport	Waste Processing	Disposal	Reuse-Recycling-Recovery Potential
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	GLO													
Specific Data Used	30%			-													
Variation - Products	21%			-													
Variation - Sites	13%			-													

(X:Included in LCA)

Geographical Scope

The geographical scope of this EPD is global.

Allocation

Source of raw material, water consumption, energy consumption and raw material transportation were weighted according to 2023 production figures. In addition, hazardous and non-hazardous waste amounts were also allocated from the 2023 total waste generation.

Cut-Off Criteria

1% cut-off is applied in LCA. Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts have been included.

Reach Regulation

No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in this product either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).

Product Composition

Product Component	Weight, %	Post-consumer material, weight-%	Biogenic material, kg C/kg
Gypsum	60-70	0	0
Water	25-35	0	0
Board liner	3-4	0	0,42
Additives	0-3	0	0

Packaging Composition

Only gypsum board stripes are used for the packaging of plasterboards. The boards are not packaged separately; they are stapled on stripes made of gypsum boards.

Product Component	Weight, kg	Weight-% (versus the product)	Biogenic material, kg C/kg
Waste gypsum board stripes	0,11	1%	0

LCA Modelling, Calculation And Data Quality

The results of the LCA with the indicators as per EPD requirement are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while fresh water use is calculated with selected inventory flows in SimaPro according to the PCR. There are no co-product allocations within the LCA study underlying this EPD. The regional energy datasets were used for all energy calculations. For LCA modelling and calculation, ecoinvent database (v3.9.1) and SimaPro (v9.5) LCA software were used. Characterization factors of EN 15804 reference package based on EF 3.1 are utilized. Impact of infrastructure and capital goods are excluded from the analysis.

Stage	Data Type
Raw Material Supply	Generic database, plant specific data
Raw Material Transport	Generic database, plant specific data
Manufacturing	Generic database, plant specific data
Product Transport	Generic database, generic data
Installation	Generic database, generic data
End of Life	Generic database, generic data
Benefits and Loads	Generic database, generic data

LCA Results

It is discouraging the use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C. 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.

CORE ENVIRONMENTAL IMPACTS PER 1 m² of PLASTERBOARD											
Mandatory indicators		Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Global Warming Potential	Total	kg CO ₂ eq.	1,06E+00	3,95E-01	1,46E-01	0,00E+00	0,00E+00	1,59E-01	0,00E+00	5,17E-02	0,00E+00
	Fossil	kg CO ₂ eq.	1,19E+00	3,95E-01	1,15E-04	0,00E+00	0,00E+00	1,59E-01	0,00E+00	5,16E-02	0,00E+00
	Biogenic	kg CO ₂ eq.	-1,35E-01	1,19E-04	1,46E-01	0,00E+00	0,00E+00	5,09E-05	0,00E+00	2,26E-05	0,00E+00
	Luluc	kg CO ₂ eq.	2,66E-03	1,94E-04	8,34E-08	0,00E+00	0,00E+00	7,77E-05	0,00E+00	3,12E-05	0,00E+00
ODP		kg CFC-11 eq.	4,01E-08	6,18E-09	2,71E-12	0,00E+00	0,00E+00	3,48E-09	0,00E+00	1,50E-09	0,00E+00
AP		mol H+ eq.	5,74E-03	1,43E-03	8,15E-07	0,00E+00	0,00E+00	6,58E-04	0,00E+00	3,89E-04	0,00E+00
EP – Freshwater		kg P eq.	7,86E-04	3,21E-05	3,00E-08	0,00E+00	0,00E+00	1,12E-05	0,00E+00	4,30E-06	0,00E+00
EP – Marine		kg N eq.	1,85E-03	4,76E-04	3,05E-07	0,00E+00	0,00E+00	2,51E-04	0,00E+00	1,49E-04	0,00E+00
EP – Terrestrial		mol N eq.	1,79E-02	5,04E-03	3,26E-06	0,00E+00	0,00E+00	2,68E-03	0,00E+00	1,60E-03	0,00E+00
POCP		kg NMVOC	5,80E-03	2,03E-03	1,10E-06	0,00E+00	0,00E+00	9,63E-04	0,00E+00	5,57E-04	0,00E+00
**ADPE		kg Sb eq.	1,77E-05	1,07E-06	2,32E-10	0,00E+00	0,00E+00	5,14E-07	0,00E+00	7,17E-08	0,00E+00
**ADPF		MJ	1,72E+01	5,75E+00	2,48E-03	0,00E+00	0,00E+00	2,27E+00	0,00E+00	1,29E+00	0,00E+00
**WDP		m³ depriv.	5,53E-01	2,93E-02	1,05E-04	0,00E+00	0,00E+00	9,25E-03	0,00E+00	5,69E-02	0,00E+00
Additional environmental impact indicators per 1 m² of plasterboard (Optional)											
PM		disease inc.	5,06E-08	3,97E-08	1,76E-11	0,00E+00	0,00E+00	1,30E-08	0,00E+00	8,52E-09	0,00E+00
*IR		kBq U-235 eq.	8,18E-02	5,28E-03	3,27E-06	0,00E+00	0,00E+00	3,04E-03	0,00E+00	8,15E-04	0,00E+00
**HTP – C		CTUh	5,21E-10	1,71E-10	6,40E-14	0,00E+00	0,00E+00	7,26E-11	0,00E+00	2,20E-11	0,00E+00
***HTP – NC		CTUh	8,15E-09	4,19E-09	7,17E-13	0,00E+00	0,00E+00	1,60E-09	0,00E+00	2,75E-10	0,00E+00
**SQP		Pt	6,46E+01	5,82E+00	5,67E-03	0,00E+00	0,00E+00	1,35E+00	0,00E+00	2,56E+00	0,00E+00
Legend		A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, B1-B7: Use Stage, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.									
Acronyms		GWP-tot: l: Climate change. GWP-fossil: Climate change– fossil. GWP–biogenic: Climate change – biogenic. GWP–luluc: Climate change – land use and transformation. ODP: Ozone layer depletion. AP: Acidification terrestrial and freshwater. EP–freshwater: Eutrophication freshwater. EPmarine: Eutrophication marine. EP–terrestrial: Eutrophication terrestrial. POCP: Photochemical oxidation. ADPE: Abiotic depletion – elements. ADPF: Abiotic depletion – fossil resources. WDP: Water scarcity. PM: Respiratory inorganics – particulate matter. IR: Ionising radiatio . HTP–c: Cancer human health effects. HTP–nc: Non–cancer human health 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 on these results are high or as there is limited experienced with the indicator.									

ADDITIONAL MANDATORY IMPACT CATEGORY INDICATORS PER 1 m² of PLASTERBOARD

Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP - GHG	kg CO ₂ eq.	1,21E+00	3,96E-01	1,15E-04	0,00E+00	0,00E+00	1,59E-01	0,00E+00	5,19E-02	0,00E+00

GWP-GHG = Global Warming Potential total excl. biogenic carbon following IPCC AR5 methodology. 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. The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO₂ is set to zero.

RESOURCE USE INDICATORS PER 1 m² of PLASTERBOARD

Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ	7,57E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,86E+00	0,00E+00
PERM	MJ	4,86E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,86E+00	0,00E+00
PERT	MJ	1,24E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRE	MJ	1,72E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,07E-02	0,00E+00
PENRM	MJ	5,07E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,07E-02	0,00E+00
PENRT	MJ	1,72E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
SM	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
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	3,24E-02	1,17E-03	2,72E-06	0,00E+00	0,00E+00	3,68E-04	0,00E+00	1,37E-03	0,00E+00

Legend 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

WASTE & OUTPUT INDICATORS PER 1 m² of PLASTERBOARD

Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	1,10E-03	1,61E-04	6,18E-08	0,00E+00	0,00E+00	5,62E-05	0,00E+00	1,58E-05	0,00E+00
NHWD	kg	1,87E-01	5,00E-01	9,80E-03	0,00E+00	0,00E+00	1,11E-01	0,00E+00	8,50E+00	0,00E+00
RWD	kg	2,08E-05	1,26E-06	7,88E-10	0,00E+00	0,00E+00	7,37E-07	0,00E+00	1,90E-07	0,00E+00
CRU	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
MFR	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
MER	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
EE (Electrical)	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
EE (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

Legend HWD: Hazardous waste disposed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposed, CRU: Components for reuse, MFR: Material for recycling, MER: Materials for energy recovery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy, Thermal.

References

GPI / General Programme Instructions of the International EPD® System. Version 4.0. EN ISO 9001/ Quality Management Systems - Requirements EN ISO 14001/ Environmental Management Systems - Requirements

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

ISO 14025 / DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations - Principles and procedures

PCR for Construction Products and Construction Services / Prepared by IVL Swedish Environmental Research Institute, Swedish environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB, The International EPD System, 2019:14 Version 1.3.3

ISO 14040/44 / DIN EN ISO 14040: 2006-10 / Environmental management - Life cycle assessment - Principles and framework (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

ISO 9001 / Quality Management System

ISO 45001 / Occupational Health and Management System

ISO 14001 / Environmental Management System

The International EPD® System / The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025. www.environdec.com

Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

SimaPro / SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com

Metsims / www.metsims.com

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