

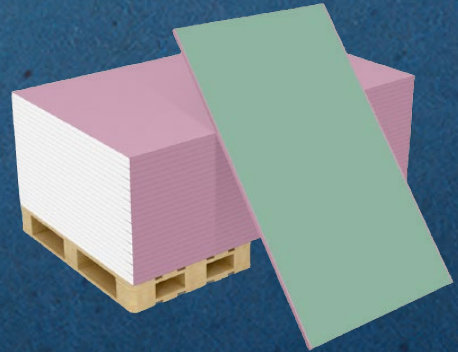
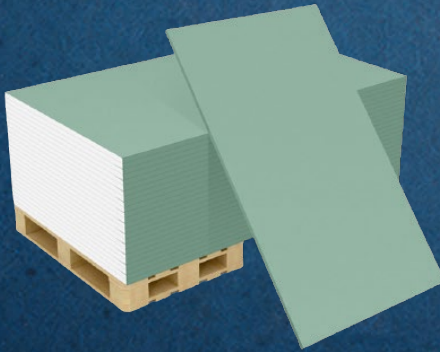
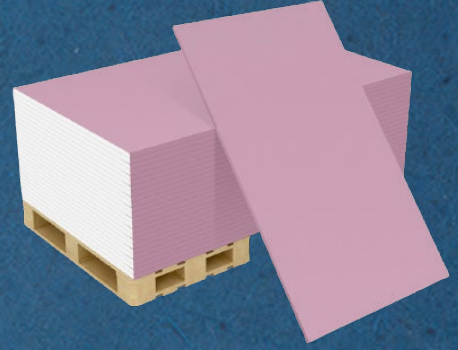
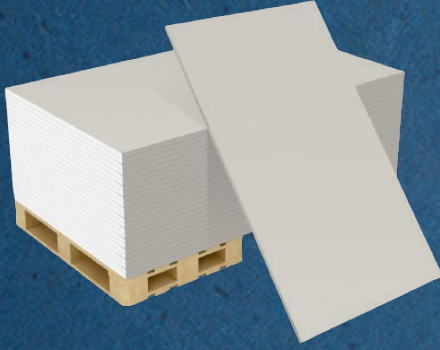
# EPD

## Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019

# Gypsum Based Plasterboard

from GİPS A.Ş.

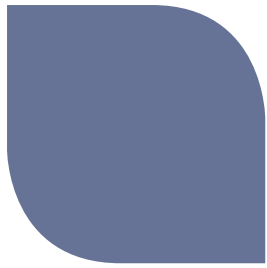


**S-P Code**  
S-P-03421

**Programme**  
EPD Turkey

**Publication Date**  
24.05.2021

**Validity Date**  
23.05.2026



# Program Information

## Programme

EPD Turkey, managed and run by:

SÜRATAM

Turkish Centre for Sustainable Production  
Research & Design, [www.suratam.org](http://www.suratam.org)

Nef 09 B Blok No:7/15 34415  
Kağıthane/Istanbul, Turkey

[www.epdturkey.org](http://www.epdturkey.org)  
[info@epdturkey.org](mailto:info@epdturkey.org)

The International EPD® System

EPD International AB  
Box 210 60 SE-100 31  
Stockholm, Sweden

[www.environdec.com](http://www.environdec.com)  
[info@environdec.com](mailto:info@environdec.com)

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Product Category Rules (PCR): 2019:14 Version 1.11, 2021-02-05, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works

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

EPD process certification

EPD verification ☒

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**Third party verifier:** Professor Vladimír Kocí

**Approved by:** The International EPD® System

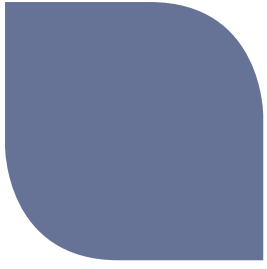
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Procedure for follow-up of data during EPD validity involves third party verifier:

Yes

No ☒

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.



# Company Information

GIPS Geliştirilmiş İnşaat Malzemeleri ve Perlitli Siva Sanayi A.Ş. (GIPS) producing gypsum plaster with ALÇIBAY trademark was established in 1992.

In 2006, to reach much more clients, our firm has increased the capacity to 2700 ton/day and necessary conditions have been provided for production based on customer satisfaction in all units within the firm.

GIPS, by producing powder gypsum such as gypsum plaster, gypsum based machine-applied plaster, satine skim plaster, gypsum sheet, binding gypsum, sealing gypsum, carton-pierre gypsum offers better options in building sector.

GIPS, following the technology, has opened to the foreign market with its all products, competes with all producing companies at domestic and foreign markets; it aims to offer best service to its clients and provide product regularity and quality.

The company have ISO 50001 Energy System Management and ISO 9001 Quality Management System Certificates.



Languages can be  
different but the name  
of quality is same:  
Gips



# About the Product

Gypsum is a construction material, being provided with superheating of gypsum  $\text{CaSO}_4 + 2\text{H}_2\text{O}$  and evaporating of its water and grinding. When it is mixed with water, gypsum gains bounding property again. Gypsum plaster is used to make plaster boards, fibrous plaster, building decorations and moulds for many applications.

In gypsum manufacturing, production starts with the transport of raw materials to the production plant. The gypsum is then heated to remove 75% of its crystal water, resulting in the formation of stucco. Dry plaster powder is then mixed with additives. The final product is sold as bagged or bulk gypsum. The finished product can be cast in moulds, extruded, applied as a thick slurry to a surface or laminated between paper boards.

Gips Geliştirilmiş İnşaat Malzemeleri Tic. A.Ş. manufactures various gypsum based plasters to required specifications for different applications in Mersin and Ankara plants.

Plasterboard manufactured by the Company are used mainly as first level plaster applied to surfaces like concrete, gas concrete, brick etc. with machine or by hand.

The CPC Code of plasterboards is 37410.



*For more information about products and application guidelines:*

*Please scan or click!*

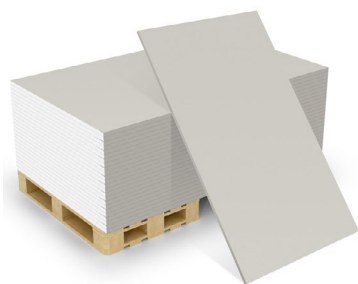
*Average composition of gypsum based plasterboards*

Raw Materials	Composition, %
Gypsum	90- 95
Paper	3.0-7.0
Glassfiber	0-1.0
Additives	0-1.0



**ekohips**

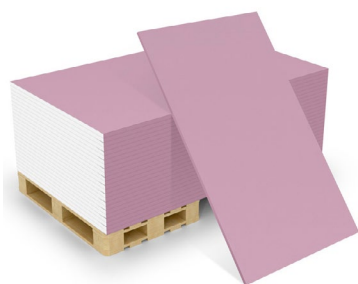




### Standard Plasterboard

High quality standard plasterboard is a smooth surfaced and lightweighted board. It can be used for ceilings, wall linings and partitions. Both sides of the plasterboard are covered with grey coloured special board which provides flexibility and high strength.

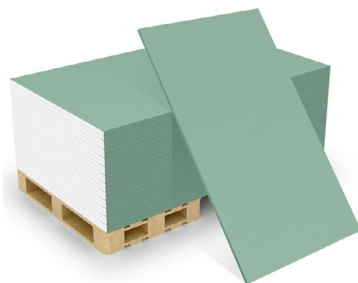
**Usage Area:** Ceiling, wall linings and partitions, drywall installation.



### Moisture and Water Resistant Plasterboard

High quality EKOPAN W Moisture and Water Resistant Plasterboard is a smooth surfaced and lightweighted. It's application is suitable for wet and humid areas etc. Also the plasterboard is water repellent. Both sides of the plasterboard are covered with green coloured special board which provides flexibility and high strength.

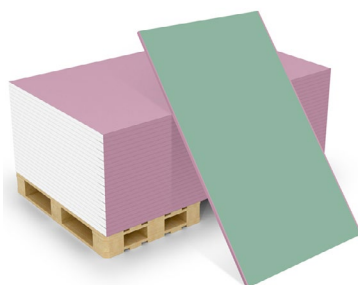
**Usage Area:** Ceiling, wall linings and partitions, drywall installation, wet areas, shaft walls.



### Fire Resistant Plasterboard

EKOPAN F High Quality Fire Resistant Plasterboard is a glass fibre reinforced, smooth surfaced and lightweighted board. It can be used for ceilings, wall linings and partitions. Both sides of the plasterboard are covered with red coloured a special board which provides flexibility and high strength.

**Usage Area:** Ceiling, wall linings and partitions, drywall installation, shaft walls and steel structures.



### Fire and Water Resistant Plasterboard

EKOPAN W&F High Quality Fire and Water Resistant Plasterboard is a fire and fire repellent additived, smooth surfaced and lightweighted. It's application is suitable for steel structures, wet areas and wall lining and partitions etc. Both sides of the plasterboard are covered with green and red coloured a special board which provides flexibility and high strength.

**Usage Area:** Ceiling, wall linings and partition, drywall installation, wet areas, shaft walls and steel structures.

## Technical Specifications

	Unit	Standard	Moisture and Water Resistant	Fire Resistant	Fire and Water Resistant
Directive	-	305/2011/AB	305/2011/AB	305/2011/AB	305/2011/AB
Appearance	-	Solid	Solid	Solid	Solid
Colour	-	Grey	Green	Red	Red Green
Reaction to Fire	-	A2-s1,d0	A2-s1,d0	A2-s1,d0	A2-s1,d0
Radius of Curvature	mm	$r \geq 2000$	$r \geq 2000$	$r \geq 2000$	$r \geq 2000$
Wet Radius of Curvature	mm	$r \geq 500$	$r \geq 500$	$r \geq 500$	$r \geq 500$
Flexural Strength- Perpendicular to Liner Paper Fibers	N	$\geq 550$	$\geq 550$	$\geq 550$	$\geq 550$
Flexural Strength - Parallel to Linear Paper Fibers)	N	$\geq 210$	$\geq 210$	$\geq 210$	$\geq 210$
Weight	kg/m <sup>2</sup>	$\approx 6.5$ kg	$\approx 7.8$ kg	$\approx 9.8$ kg	$\approx 9.8$ kg
Water Vapour Diffusion Resistance (dry )	$\mu$	4	4	-	-
Water Vapour Diffusion Resistance (wet )	$\mu$	10	10	-	-

*Note: Technical specifications are given for a thickness of 12.5 mm. For the latest and different thickness plasterboard TDS (Technical Data Sheet), please contact Gips.*



# LCA Information

**Declared Unit** 1 m<sup>2</sup> of Gypsum Based Plasterboard (12.5 mm)

**Time Representativeness** 2020

**Database(s) and LCA Software Used** Ecoinvent 3.6, SimaPro 9.1

The inventory for the LCA study is based on the 2020 production figures for Gips Gypsum Based Plasterboards. Background data as recipe of products, transportation, manufacturing details etc are taken from Gips production plants in Ankara/Turkey and Mersin/Turkey.

This EPD's system boundary is cradle to gate. The system boundary covers product stages (A1-A3), end of life stages (C1-C4) and benefits and loads stage (D).

Product Stage			Construction Process Stage		Use Stage							End of Life Stage				Benefits and Loads
Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction, demolition	Transport	Waste Processing	Disposal	Future reuse, recycling or energy recovery potentials
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

X = Included in LCA, ND = Not Declared

## System Boundary Description

### A1: Raw Material Supply

Gips's productions start from gypsum. The company supplies its raw materials necessary from suitable suppliers. Raw material supply includes raw material extraction/preparation and pre-treatment processes before production. Production for each product starts with mainly locally sourced but some transported from other parts of the world.

### A2: Transportation

Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. Transport of raw materials to production sites is taken as the weight average values for transport from raw materials supplier in 2020.

### A3 : Manufacturing

Manufacturing includes stucco preparation, followed by expanded perlite and calcite preparation for production. The mixture is then mixed with the additives. The mixture then cast into moulds surface between paper boards. Solidified plasterboard is then trimmed and packaged. Electric energy, natural gas and diesel for generators are consumed during the manufacturing.

### C1 : De-Construction/Demolition

This stage includes the deconstruction of surface applied gypsum based plasterboard in the construction site. This process can be made with human power or any machine as drill. For deconstruction of 1 kg applied gypsum based plasterboard, 0.1 kWh electricity consumption is assumed.

### C2 : Waste Transport

This stage includes the transportation of the discarded plasterboards to final disposal. Average distance from deconstruction site to waste processing site for final disposal is assumed to be 100 km.

### C3 : Waste Processing

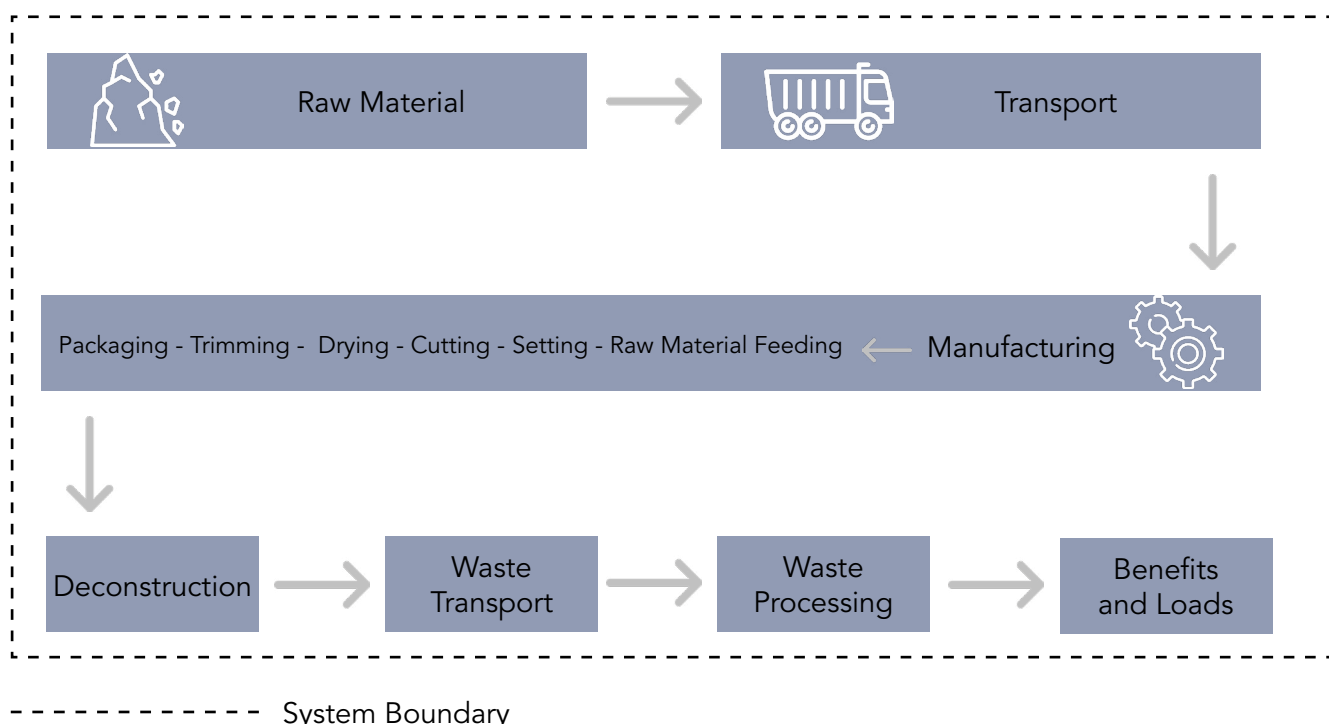
If the wastes are going to landfill , there is no need for any waste process.

### C4 : Disposal

Since gypsum-based plasterboards cannot be physically separated from the applied surface, they go to the inert waste site with the applied surface or part. For this reason, 100% landfill scenario has been asumed.

### D : Benefits and Loads

There is no benefit impact as all wastes go to the inert landfill.





## More Information

### Allocations

Water consumption, energy consumption and raw material transportation were weighted according to 2020 production figures.

In addition, hazardous and non-hazardous waste amounts were also allocated from the 2020 total waste generation.

### Cut-Off Criteria

%1 cut-off applied. 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).

### LCA Modelling, Calculation and Data Quality

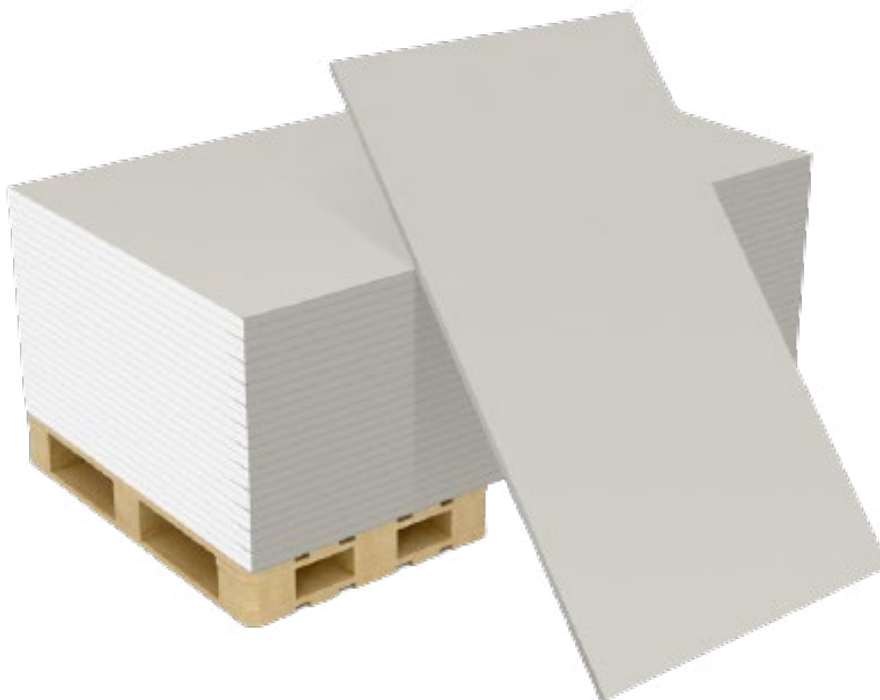
The results of the LCA with the indicators as per EPD requirement are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while fresh water use is calculated with selected inventory flows in SimaPro according to the PCR.

There are no co-product allocations within the LCA study underlying this EPD.

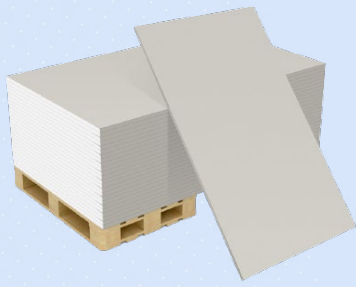
The SimaPro 9.1 LCA software and the Ecoinvent 3.6 LCA database were used to calculate the environmental impacts. The regional energy datasets were used for all energy calculations.

### Geographical Scope

The geographical scope of this EPD is global.







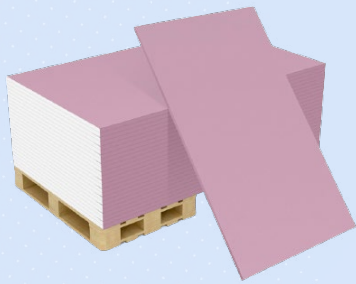
# LCA Results of Standard Plasterboard

Environmental Impacts for 1 m <sup>2</sup> Standard Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
GWP- Fossil	kg CO <sub>2</sub> eq	1.11	0.383	0.059	0	0.367	0
GWP- Biogenic	kg CO <sub>2</sub> eq	-517E-3	3.49E-3	42.9E-6	0	-519E-3	0
GWP- Luluc	kg CO <sub>2</sub> eq	5.42E-3	3.65E-3	17.2E-6	0	3.55E-3	0
GWP- Total	kg CO <sub>2</sub> eq	598E-3	390E-3	59.1E-3	0	-149E-3	0
ODP	kg CFC-11 eq	142E-9	10.8E-9	13.9E-9	0	61.3E-9	0
AP	mol H <sup>+</sup> eq	0.005	0.003	248E-6	0	3.11E-3	0
EP- Freshwater	kg PO <sub>4</sub> eq	437E-6	404E-6	4.18E-6	0	226E-6	0
EP- Marine	kg N eq	1.15E-3	409E-6	75.4E-6	0	838E-6	0
EP- Terrestrial	mol N eq	0.012	0.004	0.001	0	9.05E-3	0
POCP	kg NMVOC	3.27E-3	1.01E-3	266E-6	0	2.33E-3	0
ADPE	kg Sb eq	5.85E-6	922E-9	1.01E-6	0	4.58E-6	0
ADPF	MJ	17.0	4.21	0.919	0	6.43	0
WDP	m <sup>3</sup> depriv.	0.888	0.179	0.003	0	819E-3	0
PM	disease inc.	67.0E-9	10.7E-9	5.34E-9	0	61.0E-9	0
IR	kBq U-235 eq	0.104	0.006	0.005	0	0.097	0
ETP- FW	CTUe	52.5	3.68	0.732	0	50.0	0
HTTP- C	CTUh	352E-12	67.6E-12	18.0E-12	0	276E-12	0
HTTP- NC	CTUh	12.9E-9	3.26E-9	834E-12	0	10.3E-9	0
SQP	Pt	83.4	0.242	1.05	0	84.3	0
Acronyms	GWP-total: 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, EP-marine: 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 radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						

Resource Use for 1 m <sup>2</sup> Standard Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	15.2	1.01	0.01	0	14.7	0
PERM	MJ	0	0	0	0	0	0
PERT	MJ	15.2	1.01	0.01	0	14.7	0
PENRE	MJ	17.0	4.21	0.92	0	6.43	0
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	17.0	4.21	0.92	0	6.43	0
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m <sup>3</sup>	0.014	1.60E-3	191E-6	0	13.5E-3	0

Waste & Output Flows for 1 m <sup>2</sup> Standard Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.22E-6	0	0	0	0	0
NHWD	kg	16.8E-6	0	0	0	0	0
RWD	MJ	0	0	0	0	0	0
CRU	MJ	0	0	0	0	0	0
MFR	MJ	0	0	0	0	0	0
MER	MJ	0	0	0	0	0	0
EE (Electrical)	kg	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0
Acronyms	PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding 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, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water, 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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						



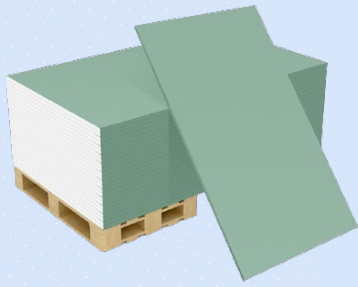


# LCA Results of Moisture and Water Resistant Plasterboard

Environmental Impacts for 1 m <sup>2</sup> Moisture and Water Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
GWP- Fossil	kg CO <sub>2</sub> eq	1.12	0.383	0.059	0	0.375	0
GWP- Biogenic	kg CO <sub>2</sub> eq	-520E-3	3.49E-3	42.9E-6	0	-522E-3	0
GWP- Luluc	kg CO <sub>2</sub> eq	7.56E-3	3.65E-3	17.2E-6	0	5.69E-3	0
GWP- Total	kg CO <sub>2</sub> eq	605E-3	390E-3	59.1E-3	0	-141E-3	0
ODP	kg CFC-11 eq	143E-9	10.8E-9	13.9E-9	0	61.8E-9	0
AP	mol H <sup>+</sup> eq	0.005	0.003	248E-6	0	3.16E-3	0
EP- Freshwater	kg PO <sub>4</sub> eq	439E-6	404E-6	4.18E-6	0	228E-6	0
EP- Marine	kg N eq	1.18E-3	409E-6	75.4E-6	0	868E-6	0
EP- Terrestrial	mol N eq	0.012	0.004	0.001	0	9.19E-3	0
POCP	kg NMVOC	3.31E-3	1.01E-3	266E-6	0	2.37E-3	0
ADPE	kg Sb eq	6.14E-6	922E-9	1.01E-6	0	4.87E-6	0
ADPF	MJ	17.2	4.21	0.919	0	6.57	0
WDP	m <sup>3</sup> depriv.	0.898	0.179	0.003	0	830E-3	0
PM	disease inc.	67.5E-9	10.7E-9	5.34E-9	0	61.5E-9	0
IR	kBq U-235 eq	0.105	0.006	0.005	0	0.097	0
ETP- FW	CTUe	52.7	3.68	0.732	0	50.3	0
HTTP- C	CTUh	367E-12	67.6E-12	18.0E-12	0	291E-12	0
HTTP- NC	CTUh	13.0E-9	3.26E-9	834E-12	0	10.5E-9	0
SQP	Pt	83.7	0.242	1.05	0	84.6	0
Acronyms	GWP-total: 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, EP-marine: 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 radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						

Resource Use for 1 m <sup>2</sup> Moisture and Water Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	15.2	1.01	0.01	0	14.7	0
PERM	MJ	0	0	0	0	0	0
PERT	MJ	15.2	1.01	0.01	0	14.7	0
PENRE	MJ	17.2	4.21	0.92	0	6.58	0
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	17.2	4.21	0.92	0	6.58	0
SM	kg	0	0	0	0		0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m <sup>3</sup>	0.015	1.60E-3	191E-6	0	14.2E-3	0

Waste & Output Flows for 1 m <sup>2</sup> Moisture and Water Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.22E-6	0	0	0	0	0
NHWD	kg	16.8E-6	0	0	0	0	0
RWD	MJ	0	0	0	0	0	0
CRU	MJ	0	0	0	0	0	0
MFR	MJ	0	0	0	0	0	0
MER	MJ	0	0	0	0	0	0
EE (Electrical)	kg	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0
Acronyms	PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding 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, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water, 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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						



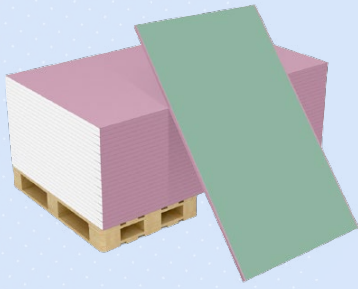
# LCA Results of Fire Resistant Plasterboard

Environmental Impacts for 1 m <sup>2</sup> Fire Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
GWP- Fossil	kg CO <sub>2</sub> eq	1.62	0.577	0.089	0	0.511	0
GWP- Biogenic	kg CO <sub>2</sub> eq	-515E-3	5.27E-3	64.7E-6	0	-518E-3	0
GWP- Luluc	kg CO <sub>2</sub> eq	6.47E-3	5.50E-3	26.0E-6	0	3.65E-3	0
GWP- Total	kg CO <sub>2</sub> eq	1.11	588E-3	89.1E-3	0	-3.21E-3	0
ODP	kg CFC-11 eq	205E-9	16.3E-9	20.9E-9	0	83.8E-9	0
AP	mol H <sup>+</sup> eq	0.007	0.004	374E-6	0	4.35E-3	0
EP- Freshwater	kg PO <sub>4</sub> eq	583E-6	609E-6	6.31E-6	0	265E-6	0
EP- Marine	kg N eq	1.63E-3	617E-6	114E-6	0	1.17E-3	0
EP- Terrestrial	mol N eq	0.017	0.006	0.001	0	12.8E-3	0
POCP	kg NMVOC	4.70E-3	1.53E-3	400E-6	0	3.31E-3	0
ADPE	kg Sb eq	11.0E-6	1.39E-6	1.52E-6	0	9.22E-6	0
ADPF	MJ	24.7	6.34	1.39	0	8.91	0
WDP	m <sup>3</sup> depriv.	0.961	0.270	0.005	0	860E-3	0
PM	disease inc.	82.8E-9	16.2E-9	8.05E-9	0	74.2E-9	0
IR	kBq U-235 eq	0.132	0.009	0.007	0	0.121	0
ETP- FW	CTUe	63.1	5.55	1.10	0	59.4	0
HTTP- C	CTUh	497E-12	102E-12	27.2E-12	0	385E-12	0
HTTP- NC	CTUh	20.6E-9	4.91E-9	1.26E-9	0	16.7E-9	0
SQP	Pt	84.3	0.365	1.59	0	85.8	0
Acronyms	GWP-total: 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, EP-marine: 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 radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						

Resource Use for 1 m <sup>2</sup> Fire Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	15.6	1.52	0.02	0	14.8	0
PERM	MJ	0	0	0	0	0	0
PERT	MJ	15.6	1.52	0.02	0	14.8	0
PENRE	MJ	24.7	6.34	1.39	0	8.91	0
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	24.7	6.34	1.39	0	8.91	0
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0.016	2.42E-3	288E-6	0	14.8E-3	0
FW	m <sup>3</sup>	0.016	2.42E-3	288E-6	0	14.8E-3	0

Waste & Output Flows for 1 m <sup>2</sup> Fire Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.22E-6	0	0	0	0	0
NHWD	kg	16.8E-6	0	0	0	0	0
RWD	MJ	0	0	0	0	0	0
CRU	MJ	0	0	0	0	0	0
MFR	MJ	0	0	0	0	0	0
MER	MJ	0	0	0	0	0	0
EE (Electrical)	kg	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0
Acronyms	PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding 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, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water, 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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						



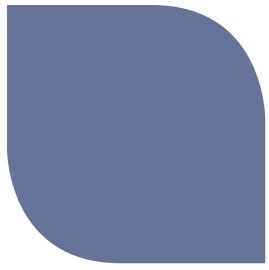


# LCA Results of Fire and Water Resistant Plasterboard

Environmental Impacts for 1 m <sup>2</sup> Fire and Water Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
GWP- Fossil	kg CO <sub>2</sub> eq	1.63	0.577	0.089	0	0.521	0
GWP- Biogenic	kg CO <sub>2</sub> eq	-518E-3	5.27E-3	64.7E-6	0	-521E-3	0
GWP- Luluc	kg CO <sub>2</sub> eq	8.61E-3	5.50E-3	26.0E-6	0	5.79E-3	0
GWP- Total	kg CO <sub>2</sub> eq	1.12	588E-3	89.1E-3	0	5.83E-3	0
ODP	kg CFC-11 eq	206E-9	16.3E-9	20.9E-9	0	84.6E-9	0
AP	mol H <sup>+</sup> eq	0.007	0.004	374E-6	0	4.42E-3	0
EP- Freshwater	kg PO <sub>4</sub> eq	586E-6	609E-6	6.31E-6	0	268E-6	0
EP- Marine	kg N eq	1.66E-3	617E-6	114E-6	0	1.20E-3	0
EP- Terrestrial	mol N eq	0.017	0.006	0.001	0	13.0E-3	0
POCP	kg NMVOC	4.74E-3	1.53E-3	400E-6	0	3.36E-3	0
ADPE	kg Sb eq	11.6E-6	1.39E-6	1.52E-6	0	9.8E-6	0
ADPF	MJ	24.9	6.34	1.39	0	9.07	0
WDP	m <sup>3</sup> depriv.	0.973	0.270	0.005	0	872E-3	0
PM	disease inc.	83.4E-9	16.2E-9	8.05E-9	0	74.8E-9	0
IR	kBq U-235 eq	0.133	0.009	0.007	0	0.121	0
ETP- FW	CTUe	63.4	5.55	1.10	0	59.8	0
HTTP- C	CTUh	514E-12	102E-12	27.2E-12	0	401E-12	0
HTTP- NC	CTUh	20.7E-9	4.91E-9	1.26E-9	0	16.9E-9	0
SQP	Pt	84.6	0.365	1.59	0	86.0	0
Acronyms	GWP-total: 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, EP-marine: 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 radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						

Resource Use for 1 m <sup>2</sup> Fire and Water Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	15.7	1.52	0.02	0	14.9	0
PERM	MJ	0	0	0	0	0	0
PERT	MJ	15.7	1.52	0.02	0	14.9	0
PENRE	MJ	24.9	6.34	1.39	0	9.07	0
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	24.9	6.34	1.39	0	9.07	0
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m <sup>3</sup>	0.016	2.42E-3	288E-6	0	15.6E-3	0

Waste & Output Flows for 1 m <sup>2</sup> Fire and Water Resistant Plasterboard							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.22E-6	0	0	0	0	0
NHWD	kg	16.8E-6	0	0	0	0	0
RWD	MJ	0	0	0	0	0	0
CRU	MJ	0	0	0	0	0	0
MFR	MJ	0	0	0	0	0	0
MER	MJ	0	0	0	0	0	0
EE (Electrical)	kg	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0
Acronyms	PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding 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, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water, 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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, C1: Deconstruction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads.						



# References

/GPI/ General Programme Instructions of the International EPD® System. Version 3.01

/ISO 9001/ Quality 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 14020:2000/ Environmental labels and declarations — General principles

/ISO 14025/ ISO 14025:2006 Preview Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures

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






/ISO 50001-2011/ Energy Management Certificate - Requirements

/PCR for Construction Products and CPC 54 Construction Services/ Prepared by IVL  
IVL Swedish Environmental Research Institute Secretariat of the International EPD® System, 2019:14  
Version 1.11, DATE 2021-02-05

/Ecoinvent/ Ecoinvent Centre, [www.ecoinvent.org](http://www.ecoinvent.org)

/SimaPro/ SimaPro LCA Package, Pré Consultants, the Netherlands, [www.pre-sustainability.com](http://www.pre-sustainability.com)

# Contact Information

Programme	<p>EPD registered through fully aligned regional programme: EPD Turkey: <a href="http://www.epdturkey.org">www.epdturkey.org</a></p>  <p>ENVIRONMENTAL PRODUCT DECLARATIONS</p>	<p>The International EPD® System <a href="http://www.environdec.com">www.environdec.com</a></p>  <p>THE INTERNATIONAL EPD® SYSTEM</p>
Programme operator	<p>EPD Turkey: SÜRATAM – Turkish Centre for Sustainable Production Research &amp; Design Nef 09 B Blok No:7/15, 34415 Kagithane / Istanbul, TURKEY</p> <p><a href="http://www.epdturkey.org">www.epdturkey.org</a> <a href="mailto:info@epdturkey.org">info@epdturkey.org</a></p>	<p>EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden</p> <p><a href="http://www.environdec.com">www.environdec.com</a> <a href="mailto:info@environdec.com">info@environdec.com</a></p>
Owner of the declaration	 <p>GELİŞTİRİLMİŞ İNŞAAT MALZEMELERİ VE PERLİTLİ SİVA SANAYİ A.Ş.</p> <p>GİPS GELİŞTİRİLMİŞ İNŞAAT MALZEMELERİ VE PERLİTLİ SİVA SANAYİ A.Ş. İlkbahar Mahallesi 606. Sok. No:7 Çankaya / ANKARA / TURKEY</p>	<p>Contact: Ceyda GAZİOĞLU ŞAHİN Chemical Engineer Phone: +90 312 287 70 00</p> <p><a href="http://www.alcibay.com">www.alcibay.com</a> <a href="mailto:info@alcibay.com">info@alcibay.com</a></p>
LCA practitioner	 <p>Turkey: Lalegül Sok. No:7/18 Kagithane 34415 4. Levent – Istanbul, Turkey +90 212 281 13 33</p>	<p>United Kingdom: 4 Clear Water Place Oxford OX2 7NL, UK 0 800 722 0185</p> <p><a href="http://www.metsims.com">www.metsims.com</a> <a href="mailto:info@metsims.com">info@metsims.com</a></p>
3rd party verifier		<p>Professor Vladimír Kocí LCA Studio Šárecká 5,16000 Prague 6- Czech Republic <a href="http://www.lcastudio.cz">www.lcastudio.cz</a></p>



[www.alcibay.com](http://www.alcibay.com)

### **Headquarters**

İlkbahar Mahallesi 606. Sk. No:7  
Çankaya / ANKARA

### **Ankara Factory**

Durmetepe Mevkii Çavuşluköyü  
Bala / ANKARA

### **Mersin Factory**

Atalar Mh. Çiçekli Cd. No:106  
Yenice / Tarsus / MERSİN