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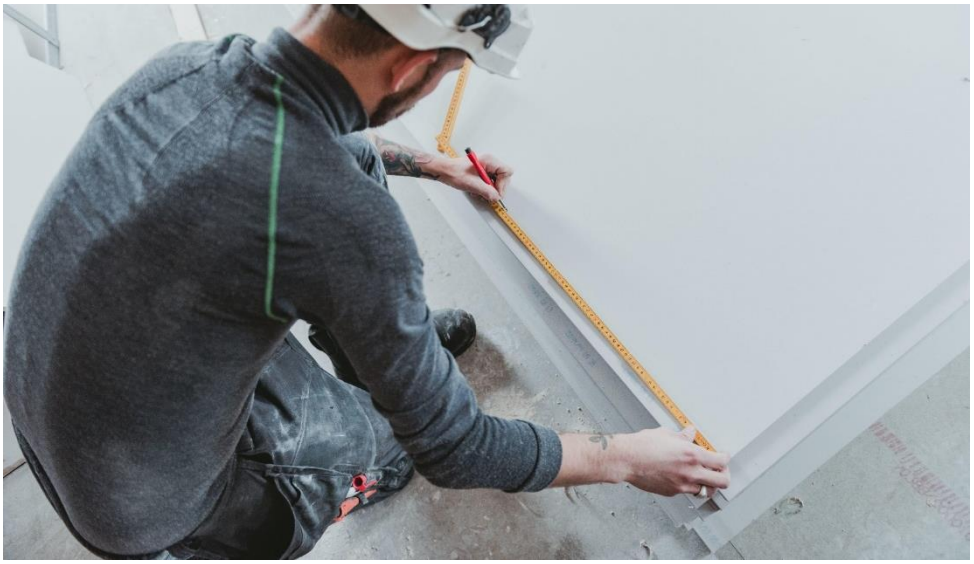

Gyproc® A 12,5

ISSUED 25.10.2024
VALID UNTIL 25.10.2029

THIRD PARTY VERIFIED
in accordance with EN 15804+A2
and B-EPD PCR

DECLARED UNIT AND MODULES DECLARED
1m² of installed Gyproc® A 12,5 plasterboard

Cradle-to-gate with options

A123	A4	A5	B2 B4	C	D
•	•	•	•	•	•

The intended use of this EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings. This EPD is only valid when registered on www.b-epd.be. The FPS Public Health cannot be held responsible for the information provided by the owner of the EPD.

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1 PRODUCT DESCRIPTION

1.1 Product name

Gyproc® A 12,5
plasterboard type A (EN 520) produced at Kallo, Belgium

1.2 Product description and intended use

Gyproc® A 12,5 is a 12.5 mm thick standard plasterboard suitable for most interior building applications where normal levels of fire resistance, structural strength and sound insulation are specified. Gyproc® A 12,5 plasterboard can be used in light weight building systems of 1 to 3 layers on steel or timber framing. The tapered edge allows the use of joint filler to produce a durable joint reinforcement and a smooth, continuous, crack-resistant surface ready for priming and final decoration. The smooth surface of the paper lining is an ideal base for decoration with wallpaper or by painting.

Plasterboard is made up of a gypsum core (calcium sulfate hydrate) with additives and a paper liner. Small quantities of starch, foam and dispersants are added to the core.

This is a specific EPD for the Gyproc® A 12.5 boards produced in Kallo, Belgium by Saint-Gobain Construction Products nv/sa.

1.3 Declared unit

1m² of installed Gyproc® A 12,5 plasterboard with a weight of 8,75 kg/m² installed in Belgium. Packaging is included.

1.4 Installation

Materials for fixation and installation are included. This EPD includes the impacts of all processes, fixating materials, and jointing material needed for installing the product according to following scenario: screwed installation on metal profiles or timber framing. The structure (metal profiles or timber framing) is not included in the EPD.

1.5 Composition and content

Components	Composition / content / ingredients	Quantity
Gyproc® A 12,5	– Natural gypsum – Recycled gypsum – Paper liner – Process Additives	– 6,29 kg/m² – 0,77 kg/m² – 0,34 kg/m² – 0,2 kg/m²
Fixation materials	– Screws	– 8 pcs/m²
Jointing materials	– Paper tape – Jointing compound	– 1,23 m/m² – 0,33 kg/m²
Packaging	– Wooden pallet	– 0,22 kg/m²

The product does not contain materials listed in the “Candidate list of Substances of Very High Concern for authorization”.

1.6 Reference service life

The reference service life is estimated at 60 years.
This 60-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.
The conditions under which this RSL is valid are as following:

- The product should be installed according to manufacturer’s instructions.
- The product is not suitable for outdoor applications.
- The product is suitable for indoor applications in a dry environment at room temperature.
- No maintenance is required during the product’s RSL.

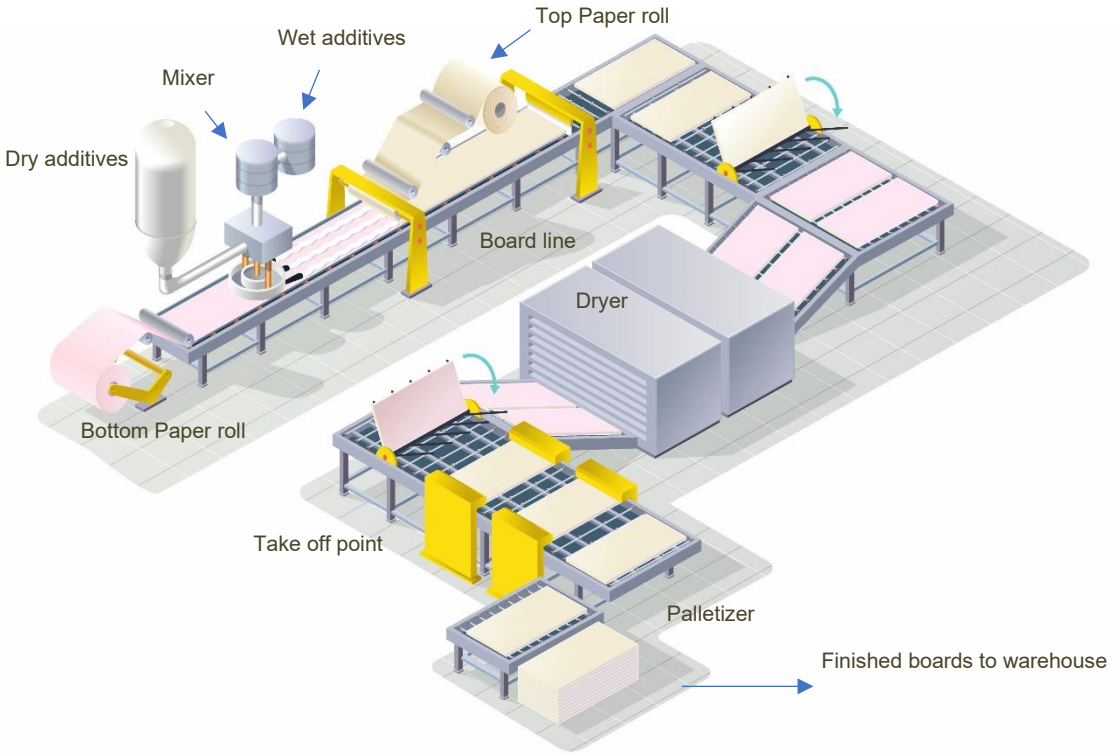
1.7 Description of geographical representativity

Data included in this EPD is collected from one production site, Kallo.
The EPD is representative for the Belgian market

1.8 Description of the production process and technology

The initial materials are homogenously mixed to form a gypsum slurry that is spread via multiple hose outlets onto a paper liner on a moving conveyor belt. A second paper liner is fed onto the production line from above to form the plasterboard. The plasterboard continues along the production line where it is finished, dried, and cut to size.

All plasterboard cut-offs and waste are recycled and the Recycled Gypsum is 100% reintegrated back into the manufacturing process.



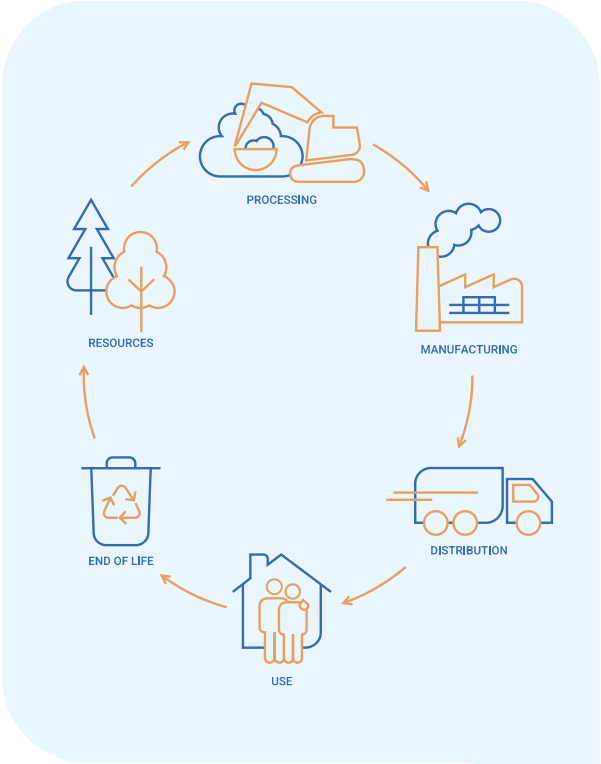
2 TECHNICAL DATA / PHYSICAL CHARACTERISTICS

Technical property	Standard	Value	Unit	Comment
Thickness	EN 520	12,5	mm	
Width	EN 520	1200	mm	
EN Classification	EN 520	Type A	-	
Reaction to fire	EN 520	A2, s1, d0	-	
Thermal conductivity	EN ISO 10456	0,25	W/m.K	
Water vapour resistance factor, μ	EN ISO 10456	4	-	

3 LCA-STUDY

3.1 Date of LCA-study

Date of model development: July 3rd 2024
Date of LCA study: July 3rd 2024



3.2 Software

For the calculation of the LCA results, the software program Gabi 10 has been used.

3.3 Information on allocation

Allocation has been avoided when possible and when not possible a mass allocation has been applied.
The polluter pays as well the modularity principles have been followed.

3.4 Informatie on cut off

The cut-off criteria used in this study is based on mass with the following details. All inputs and outputs for which data is available are included in the calculation.
In case of insufficient input data or data gaps for a unit process, the cut-off criterion is 1% of renewable and non-renewable primary energy usage and 1% of the total mass input of that unit process. The total of neglected input flows per module is a maximum of 5% of energy usage and mass. Conservative assumptions in combination with plausibility considerations and expert judgement have been used to demonstrate compliance with these criteria.
All hazardous and toxic materials and substances are included in the inventory and the cut-off rules do not apply.

3.5 Information on excluded processes

Following processes were excluded for the inventory:

- Research and development activities
- Flows related to human activities such as employee transport and administration activity
- Saint-Gobain capital equipment

3.6 Information on biogenic carbon modelling

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

Biogenic carbon content	(kg C / FU)
Biogenic carbon content in product (at the gate)	1,76E-01
Biogenic carbon content in accompanying packaging (at the gate)	1,06E-01

3.7 Information on carbon offsetting

Carbon offsetting is not allowed in the EN 15804 and hence not taken into account in the calculations.

3.8 Additional or deviating characterisation factors

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors are from the ILCD. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant. Characterization factors EN15804 based on EF 3.1.

3.9 Specificity

The data used for the LCA are specific for this product which is manufactured by a single manufacturer in a single production site.

3.10 Period of data collection

Manufacturer specific data have been collected for the year 2022.

3.11 Information on data collection

Inventory data quality is judged by geographical, temporal, and technological representativeness. To cover these requirements and to ensure reliable results, first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records and reporting documents from Saint-Gobain Construction Products nv/sa plant at Kallo, Belgium. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects good inventory data quality.

3.12 Database used for background data

Background data from Sphera 2023 and ecoinvent v.3.8

3.13 Energy mix

The main energy used is natural gas for the calcination of gypsum and drying of the plasterboard.
The factory based in Kallo uses renewable electricity produced on-site by wind mill and purchased with Guarantee of Origin certificate (GO's). Hence, the electricity mix considered for the manufacturing of the studied product is modelled according to the electricity mix described in the Guarantee of Origin certificate.

4 PRODUCTION SITES

Gyproc® A 12,5 is only produced in the Kallo plant in Belgium.

5 SYSTEM BOUNDARIES

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Construction installation stage	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☒	☒	☒	☒	☒

X = included in the EPD
☐ = module not declared

The study follows a cradle to gate with options approach and includes all the stages of the life cycle from product stage to end of life stage. To be consistent with the Product Category Rules (PCR) and the EN 15804:2012+A2:2019 standard, the model for the life cycle of the product includes 5 stages described above.

6 POTENTIAL ENVIRONMENTAL IMPACTS PER REFERENCE FLOW

	Product stage	Construction process stage		Use stage							End-of-life stage				
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP total (kg CO2 equiv/FU)	1,36E+00	1,73E-01	6,32E-01	0	0	0	0				3,63E-02	1,35E-01	4,24E-03	1,25E+00	-3,58E-02
GWP fossil (kg CO2 equiv/FU)	2,01E+00	1,73E-01	1,90E-01	0	0	0	0				3,62E-02	1,35E-01	4,00E-03	4,58E-02	-4,32E-02
GWP biogenic (kg CO2 equiv/FU)	-6,52E-01	7,30E-04	4,42E-01	0	0	0	0				5,00E-05	5,90E-04	2,30E-04	1,21E+00	6,12E-03
GWP luluc (kg CO2 equiv/FU)	9,60E-04	7,00E-05	1,20E-04	0	0	0	0				3,83E-06	5,00E-05	3,69E-06	5,00E-05	1,22E-03
ODP (kg CFC 11 equiv/FU)	2,46E-09	4,03E-08	3,87E-09	0	0	0	0				7,74E-09	3,11E-08	6,10E-10	1,52E-08	2,02E-08
AP (mol H+ eq/FU)	3,86E-03	7,10E-04	4,70E-04	0	0	0	0				3,80E-04	5,50E-04	3,00E-05	4,50E-04	9,20E-04
EP - freshwater (kg (P)-equiv/FU)	9,93E-06	1,21E-06	2,94E-06	0	0	0	0				1,20E-07	9,43E-07	5,66E-08	4,13E-07	2,00E-05
EP - marine (kg (N)-equiv/FU)	1,65E-03	2,10E-04	2,00E-04	0	0	0	0				1,70E-04	1,60E-04	1,00E-05	5,90E-04	3,00E-04
EP - terrestrial mol N-equiv/FU)	1,70E-02	2,33E-03	1,74E-03	0	0	0	0				1,83E-03	1,80E-03	1,40E-04	1,61E-03	2,05E-03
POCP (kg Ethene equiv/FU)	3,77E-03	7,20E-04	4,50E-04	0	0	0	0				5,00E-04	5,50E-04	3,00E-05	6,00E-04	6,70E-04
ADP Elements (kg Sb equiv/FU)	1,04E-06	5,51E-07	4,56E-07	0	0	0	0				1,86E-08	4,68E-07	3,40E-08	1,00E-07	1,07E-06
ADP fossil fuels (MJ/FU)	3,14E+01	2,64E+00	2,89E+00	0	0	0	0				4,95E-01	2,04E+00	7,36E-02	1,16E+00	-2,58E-02
WDP (m^3 water eq deprived /FU)	2,45E-01	1,30E-02	3,04E-01	0	0	0	0				1,22E-03	9,74E-03	8,70E-04	6,29E-02	1,35E-01

GWP TOTAL = TOTAL GLOBAL WARMING POTENTIAL (CLIMATE CHANGE); GWP-LULUC = GLOBAL WARMING POTENTIAL (CLIMATE CHANGE) LAND USE AND LAND USE CHANGE; ODP = OZONE DEPLETION POTENTIAL; AP = ACIDIFICATION POTENTIAL FOR SOIL AND WATER; EP = EUTROPHICATION POTENTIAL; POCP = PHOTOCHEMICAL OZONE CREATION; ADPE = ABIOTIC DEPLETION POTENTIAL – ELEMENTS; ADPF = ABIOTIC DEPLETION POTENTIAL – FOSSIL FUELS; WDP = WATER USE (WATER (USER) DEPRIVATION POTENTIAL, DEPRIVATION-WEIGHTED WATER CONSUMPTION)

7 RESOURCE USE

	Product stage	Construction process stage		Use stage							End-of-life stage				
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
PERE (MJ/FU, net calorific value)	3,14E+00	3,66E-02	4,13E-01	0	0	0	0				2,80E-03	2,88E-02	1,39E-02	3,54E-01	1,35E+00
PERM (MJ/FU, net calorific value)	9,45E+00	0,00E+00	5,87E-01	0	0	0	0				0,00E+00	0,00E+00	-6,70E-03	-0,3162	0
PERT (MJ/FU, net calorific value)	1,26E+01	3,66E-02	1,00E+00	0	0	0	0				2,80E-03	2,88E-02	7,24E-03	3,73E-02	1,35E+00
PENRE (MJ/FU, net calorific value)	3,11E+01	2,64E+00	2,86E+00	0	0	0	0				4,95E-01	2,04E+00	7,46E-02	1,16E+00	-2,73E-02
PENRM (MJ/FU, net calorific value)	3,28E-01	0,00E+00	3,48E-02	0	0	0	0				0	0	0	0	0
PENRT (MJ/FU, net calorific value)	3,15E+01	2,64E+00	2,90E+00	0	0	0	0				4,95E-01	2,04E+00	7,36E-02	1,16E+00	-2,52E-02
SM (kg/FU)	1,34E+00	0	8,24E-02	0	0	0	0				0	0	0	0	0
RSF (MJ/FU, net calorific value)	2,56E-24	0	1,57E-25	0	0	0	0				0	0	0	0	0
NRSF (MJ/FU, net calorific value)	3,00E-23	0	1,85E-24	0	0	0	0				0	0	0	0	0
FW (m^3 water eq/FU)	9,00E-03	3,00E-04	7,35E-03	0	0	0	0				3,00E-05	2,30E-04	2,00E-05	1,47E-03	-1,10E-04

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 RESOURCES; SM = USE OF SECONDARY MATERIAL; RSF = USE OF RENEWABLE SECONDARY FUELS; NRSF = USE OF NON-RENEWABLE SECONDARY FUELS; FW = NET USE OF FRESH WATER

8 WASTE CATEGORIES & OUTPUT FLOWS

	Product stage	Construction process stage		Use stage							End-of-life stage				
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Hazardous waste disposed (kg/FU)	9,80E-06	6,73E-06	1,19E-06	0	0	0	0				1,36E-06	5,31E-06	2,26E-07	1,58E-06	3,17E-06
Non-hazardous waste disposed (kg/FU)	5,00E-02	1,87E-01	6,86E-01	0	0	0	0				2,84E-03	1,20E-01	2,60E-03	7,39E+00	8,11E-02
Radioactive waste disposed (kg/FU)	1,32E-04	2,00E-05	2,00E-05	0	0	0	0				3,43E-06	1,00E-05	0	9,39E-06	-5,00E-05
Components for re-use (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0	0	0	0				0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling (kg/FU)	0,00E+00	0	1,01E-01	0	0	0	0				0	0	1,68E+00	0	0
Materials for energy recovery (kg/FU)	0	0	0	0	0	0	0				0	0	0	0	0
Exported electrical energy EEE (MJ/FU)	0	0	6,73E-03	0	0	0	0				0	0	0	0,1122	0
Exported thermal energy EET (MJ/FU)	0	0	1,22E-02	0	0	0	0				0	0	0	0,204	0

9 IMPACT CATEGORIES ADDITIONAL TO EN 15804

	Product stage	Construction process stage		Use stage							End-of-life stage				
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
PM (disease incidence)	1,53E-07	1,30E-08	1,63E-08	0	0	0	0				9,97E-09	9,34E-09	7,10E-10	7,61E-09	3,46E-08
IRHH (kg U235 eq/FU)	2,07E-02	1,35E-02	7,35E-03	0	0	0	0				2,24E-03	1,05E-02	1,34E-03	5,76E-03	2,53E-02
ETF (CTUe/FU)	4,43E+00	2,13E+00	1,47E+00	0	0	0	0				2,89E-01	1,64E+00	5,82E-02	1,90E+00	4,40E+00
HTCE (CTUh/FU)	4,13E-10	6,46E-11	8,48E-11	0	0	0	0				1,13E-11	5,16E-11	3,39E-12	2,67E-11	1,02E-10
HTnCE (CTUh/FU)	1,35E-08	1,94E-09	2,49E-09	0	0	0	0				2,12E-10	1,49E-09	4,28E-11	1,34E-09	1,19E-09
Land Use Related impacts (dimensionless)	6,97E+00	2,16E+00	1,74E+00	0	0	0	0				6,22E-02	1,39E+00	1,98E-01	2,26E+00	4,29E+01

HTCE = HUMAN TOXICITY – CANCER EFFECTS; HTNCE = HUMAN TOXICITY – NON CANCER EFFECTS; ETF = ECOTOXICITY – FRESHWATER; (POTENTIAL COMPARATIVE TOXIC UNIT)
PM = PARTICULATE MATTER (POTENTIAL INCIDENCE OF DISEASE DUE TO PM EMISSIONS);
IRHH = IONIZING RADIATION – HUMAN HEALTH EFFECTS (POTENTIAL HUMAN EXPOSURE EFFICIENCY RELATIVE TO U235);

9.1 Environmental impact categories explained

 Global Warming Potential	The global warming potential of a gas refers to the total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1. It is split up in 4: – Global Warming Potential total (GWP-total) which is the sum of GWP-fossil, GWP-biogenic and GWP-luluc – Global Warming Potential fossil fuels (GWP-fossil) : The global warming potential related to greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc). – Global Warming Potential biogenic (GWP-biogenic) : The global warming potential related to carbon emissions to air (CO2, CO and CH4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood. – Global Warming Potential land use and land use change (GWP-luluc): The global warming potential related to carbon uptakes and emissions (CO2, CO and CH4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).
 Ozone Depletion	Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbonsor halons), Which break down when they reach the stratosphere and then catalytically destroy ozone molecules.
 Acidification potential	Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.
 Eutrophication potential	The potential to cause over-fertilization of water and soil, which can result in increased growth of biomass and following adverse effects. It is split up in 3: – Eutrophication potential - freshwater: The potential to cause over-fertilization of freshwater, which can result in increased growth of biomass and following adverse effects. – Eutrophication potential - marine: The potential to cause over-fertilization of marine water, which can result in increased growth of biomass and following adverse effects. – Eutrophication potential - terrestrial: The potential to cause over-fertilization of soil, which can result in increased growth of biomass and following adverse effects.
 Photochemical ozone creation	Chemical reactions brought about by the light energy of the sun creating photochemical smog. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.
 Abiotic depletion potential for non-fossil ressources	Consumption of non-renewable resources, thereby lowering their availability for future generations. Expressed in comparison to Antimonium (Sb). 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.
 Abiotic depletion potential for fossil ressources	Measure for the depletion of fossil fuels such as oil, natural gas, and coal. The stock of the fossil fuels is formed by the total amount of fossil fuels, expressed in Megajoules (MJ). 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.

Ecotoxicity for aquatic fresh water	The impacts of chemical substances on ecosystems (freshwater). 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.
Human toxicity (carcinogenic effects)	The impacts of chemical substances on human health via three parts of the environment: air, soil and water. 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.
Human toxicity (non-carcinogenic effects)	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.
Particulate matter	Accounts for the adverse health effects on human health caused by emissions of Particulate Matter (PM) and its precursors (NOx, SOx, NH3)
Resource depletion (water)	Accounts for water use related to local scarcity of water as freshwater is a scarce resource in some regions, while in others it is not. 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.
Ionizing radiation - human health effects	This impact category deals mainly with the eventual impact on human health of low dose ionizing radiation 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.
Land use related impacts	The indicator is the “soil quality index” which is the result of an aggregation of following four aspects: – Biotic production – Erosion resistance – Mechanical filtration – Groundwater The aggregation is done based on a JRC model. The four aspects are quantified through the LANCA model for land use. 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.

10 DETAILS OF THE UNDERLYING SCENARIOS USED TO CALCULATE THE IMPACTS

10.1 A1 - raw material supply

This module takes into account the extraction and processing of all raw materials (natural gypsum, recycled gypsum, additives, paper,…), energy and packaging which occur upstream to the manufacturing site.

10.2 A2 – transport to the manufacturer

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

10.3 A3 - manufacturing

This module includes the manufacture of products and the manufacture of packaging. The production of packaging material is considered at this stage. The processing of any waste arising from this stage is also included.

10.4 A4 – transport to the building site

Plasterboards are categorized as 'loose products' in table 6 of the B-PCR. The following transport steps apply:

- 40% directly to the construction site over 100 km with a 16-32 ton lorry
- 60% to a supplier over 100 km with a 16 -32 ton lorry
  - 85% of these 60% is transported over 35 km from supplier to construction site with a 16-32 ton lorry
  - 15% of these 60% is transported over 35 km from supplier to construction site with a 7.5-16 ton lorry

Fuel type and consumption of vehicle or vehicle type used for transport	Truck: >32 Ton Diesel: 0.16l/km (default data ecoinvent)	Truck: 16-32 Ton Diesel: 0.03 l/km (default data ecoinvent)	Truck: 7.5-16 Ton Diesel: 0.4 l/km (default data ecoinvent)
Distance (km)	60	69.75	5.25
Capacity utilisation (including empty returns)	Default data from ecoinvent	Default data from ecoinvent	Default data from ecoinvent
Bulk density of transported products	700 kg/m3	700 kg/m3	700 kg/m3
Volume capacity utilization factor	1	1	1

10.5 A5 – installation in the building

At the construction site, packaging materials are released. Also 5% material losses have been taken into account

Parts of the installation	quantity	Description
Processes necessary for the installation of the product	-	– Cutting the plasterboard to size (by hand), – Fixing the plasterboard on the framing with screws.. – Filling the joint between plasterboards with jointing compound reinforced by jointing tape.
Fixation materials	*8 pcs*	Screws
Jointing materials	*0.33 kg* *1.23 m*	Jointing compound Jointing tape
Treatments	-	-
Material losses	*5%*	Plasterboard
Packaging	*0.22 kg*	Wooden pallet

Ancillary materials for installation (specified by material)	Insert information
Water use	0.105 litres
Other resource use	none
Quantitative description of energy type (regional mix) and consumption during the installation process	none
Waste materials on the building site before waste processing, generated by the product's installation (specified by type)	0.438 (kg) scrap plasterboard
Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery, disposal (specified by route)	– 5% of plasterboard : 20% recycling / 80% landfil – Wooden pallet: re-used 7 times
Direct emissions to ambient air, soil and water	None
Distance	50 km to landfill 30 km to recycling

10.6 B – use stage (excluding potential savings)

Description of the stage:
the use stage is divided into the following modules:

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

Description of the scenarios and additional technical information:
The product has a reference service life of 60 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement, or refurbishment throughout this period. Therefore, it has no impact at this stage.

Module C2 – Transport to waste processing

Type of vehicle (truck/boat/etc.)	Fuel consumption (litres/km)	Distance (km)	Capacity utilisation (%)	Density of products (kg/m3)	Assumptions
Truck 16-32 ton	Diesel 0.03 l/km (default data from ecoinvent)	50km (landfill) 30km (recycling) 100km (incineration	Default data from ecoinvent	700	Same truck for all the scenarios of end-of-life

10.7 C: End of life

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

- C1: Deconstruction, demolition: The de-construction and/or dismantling of the product take part of the demolition of the entire building. In our case, a small amount of energy is considered 0.05 MJ/m².
- C2: Transport to waste processing we used standard eco invent data according B-EPD pcr
- C3: Waste processing for reuse, recovery and/or recycling
- C4: disposal, including provision and all transport, provision of all materials, products and related energy and water use

End-of-life modules – C3 and C4

Parameter	Value (kg)
Wastes collected separately	1.7 kg (20 % of plasterboard)
Wastes collected as mixed construction waste	0
Waste for re-use	none
Waste for recycling	1.63 kg (20% of gypsum)
Waste for energy recovery	0.07 kg (20% of paperliner)
Waste for final disposal	7.35 kg (80% of plasterboard and 100% of auxiliaries (eg: jointing compounds, tape))

10.8 D – Benefits and loads beyond the system boundaries

In the module D is declared the environmental benefits from reusable products, recyclable materials, or energy recovery. Module D considers product raw materials, and relevant packaging valorisation in recycling and/or in incineration with energy recovery.

QUANTITATIVE DESCRIPTION OF THE LOADS BEYOND THE SYSTEM BOUNDARIES	The processing of recycled materials, such as gypsum and paper liner
QUANTITATIVE DESCRIPTION OF THE BENEFITS BEYOND THE SYSTEM BOUNDARIES	The recycled material from the gypsum and the energy recovery from incineration of paper

11 RELEASE OF DANGEROUS SUBSTANCES TO INDOOR AIR, SOIL AND WATER DURING THE USE STAGE

11.1 Indoor air

TVOC measured by Eurofins (report 392-2017-00243303_A_EN_Gyproc_StandardA_IAC GOLD) in 2017:

Standard	Version	Reporting limit VOC (µg/m³)	Calculation of TVOC	Combined uncertainty [RSD(%)]	Result
CEN/TS 16516	October 2013	5	Toluene eq.	22%	Pass

12 DEMONSTRATION OF VERIFICATION

EN 15804+A2 serves as the core PCR

Independent verification of the environmental declaration and data according to standard EN ISO 14025:2010
Internal ☐ External ☒

Third party verifier:
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13 APPLICATION UNIT

Plasterboard can be used for:

- partition walls: plasterboard is installed on both sides of the steel or timber frame
- wall lining. plasterboard is installed on one side of the steel or timber frame

The application unit can be 1 m² of partition wall or 1 m² of wall lining.

Depending on the technical demands for the system (fire resistance, sound insulation, structural strength, …) 1 to 3 layers of plasterboard can be used.

The application unit relates to the declared unit as follows:

System	Layers	m² installed plasterboard
Partition wall	1	2 m²
	2	4 m²
	3	6 m²
Wall lining	1	1 m²
	2	2 m²
	3	3 m²

14 ADDITIONAL INFORMATION ON REVERSIBILITY

Description	Type of fixing	Level of reversibility	Simplicity of disassembly	Speed of disassembly	Ease of handling (size and weight)	Robustness of material (material resistance to disassembly)	Comment
Gyproc® A 12,5 can be mounted on: – steel profiles – timber framing	Screws	Non reversible connection				–	

15 BIBLIOGRAPHY

ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and framework.
ISO 14044:2006: Environmental Management-Life Cycle Assessment-Requirements and guidelines.
ISO 14025:2006: Environmental labels and Declarations-Type III Environmental Declarations-Principles and procedures.
NBN EN 15804+A2:2019
B-EPD PCR

European Chemical Agency, Candidate List of substances of very high concern for Authorization.
https://echa.europa.eu/candidate-list-table

General information

Owner of the EPD, Responsible for the data, LCA and information

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Date of verification: 12.09.2024
External independent verification of the declaration and data according to EN ISO 14025 and relevant PCR documents

Comparing EPDs is not possible unless they are conform to the same PCR and taking into account the building context.
The program operator cannot be held responsible for the information supplied by the owner of the EPD nor LCA practitioner.

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