Environmental Product Declaration

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

GECON Acoustic 10

Sound Insulation Board

GreenCon
Innovations for future

Programme:	Programme operator:	EPD registration number:	Publication date:	Valid until:	Geographical scope:
The International EPD® System www.environdec.com	EPD International AB	S-P-05790	2022-03-21	2027-03-01	Europe

GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	GreenCon International, s.r.o.
Address	Rajská 7, 811 08 Bratislava, Slovakia
Contact details	kovacik@greencon.sk
Website	www.greencon.sk

PRODUCT IDENTIFICATION

Product name	Gecon Acoustic 10
Additional label(s)	-
Product number / reference	Wood-based panels according to EN 324 - 1
Place of production	BPS Majcichov, Malý Háj, Slovak Republic

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD program operator	EPD International AB
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the EPD International PCR 2019:2014 version 1.11 (2021-02-05) is used.
EPD author	Silvia Vilcekova, Eva Krídlová Burdová, SALVIS, s.r.o.,
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Verification date	2022-03-18
EPD verifier	Bárbara M Civit
EPD number	S-P-05790
Eco Platform #	-
Publishing date	2022-03-21
EPD valid until	2027-03-01

The International EPD System

EPDs within the same product category but from different programmes may not be comparable.

GECON Acoustic 10

Sound insulation board

All tests of airborne soundproofing have confirmed its leading position in competition with products used so far. Among them, it has unique sound insulation and mechanical properties, as well as a significantly lower purchase price. It is produced by technology developed and protected by the company, which significantly reduces the emission footprint in the production of boards and by 99% recycling various types of input materials that cannot be recycled. In our company, these materials get a second chance and after processing they meet strict EU standards. Our boards are manufactured without the content of substances harmful to health or nature (even without formaldehyde).

Table 1 Product raw material composition

Product and packaging material	Mass %	Post-consumer %	Renewable %	Country region of origin
Waste paper	80.5	100	-	EU
Adhesive	14.5	-	-	EU
Cover paper	4.5	-	-	SK
PE foil	0.5	100	-	EU
PE foil	0.2	-	-	EU
Wood pallet	1.25	-	100	SK

Properties:

- improvement of impact sound,
- certificates for airborne soundproofing, soundproofing and thermal parameters valid in EU,
- easy application even in wet processes,
- ability to regulate air humidity,
- resistance to fungi and pests (our adhesives have a pH that repels pests),
- HT treatment (Heat Treatment),
- energy saving,
- application to floors, walls and ceilings,
- easy handling,
- supplied as a large board with dimensions of 1.200×2.700 mm, therefore eliminating the joining small parts and sealing gaps.

Table 2 Product characteristics

GECON Acoustic	*Technical parameter*
Density	800 kg/m^3
Moisture content	5 - 12 %
Airborne sound insulation Rw in dB *(board thickness 10 mm)*	33 dB
Thermal conductivity	0.19 (W/m.K)
Step noise reduction index	26 - 35 dB
Index of normalized impacts sound level $L_{n,r,w}$	43 - 52 dB
Weight	8 kg/m^2
Thickness	10 mm
Length	from 800 to 2 700 mm
Width	from 600 to 1 200 mm

Application

As a self-supporting lightweight composite board for indoor use and dry construction, it has a very wide range of usage due to its excellent airborne soundproofing parameters. It can be used in all areas where acoustic properties are required. Whether it is necessary to reduce the noise level in the attic, house, apartment, office, music studio or cinema, the GECON Acoustic board will convince you of its qualities. Its usage will also ensure a pleasant living climate throughout the year. Examples of usage:

- dry floors and ceilings
- sound-insulating wall coverings
- construction systems and structures (attics, ceilings, walls, floors)

Execution

Gecon Acoustic 10 is supplied as a large board with dimensions of 1200×2700×10 mm, so there is no need to assemble small parts and seal the gaps. It is also produced in smaller formats on request.

Technical data / physical characteristics

Further information can be found at www.greencon.sk

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT INFORMATION

Manufacturing and packaging

A1-A3

A1 Raw materials

The environmental impacts of raw material supply include emissions generated when raw materials are taken from nature, transported to industrial units for processing and processed, along with waste handling from the various production processes. All major upstream processes are taken into consideration, including infrastructure. Loss of raw material and energy transmission losses are also taken into account. This stage includes all the aforementioned for the raw materials which end up in the final product (i.e. crushing, gluing and packaging) as well as the electricity and heat production which are consumed during manufacturing at the plant.

A2 Transport

The considered transportation impacts include exhaust emissions resulting from the transport of all raw materials from suppliers to production plant as well as the environmental impacts of production of the used fuel. The transportation distances and methods were provided by manufacturer.

Module includes road transport (truck EURO5, 16-32t, consumption 35 l / 100 km).

A3 Manufacturing

The environmental impacts considered for the production stage cover the manufacturing of the production materials (i.e. crushing, gluing and packaging) and fuels used by machines. The environmental impacts of this stage have been calculated using the most recent data in regard to what applied in the factory. The data is from the year 2020. The study considers the losses of main raw materials occurring during the manufacturing process.

Transport and installation

A4-A5

A4 Transport

Transportation impacts occurred from final products delivery to construction site cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The transportation distance is defined according to PCR. Average distance of transportation from production plant to building site is assumed as 188 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product are packaged properly. Transport is considered based on the scenario described in Table 3.

A5 Assembly

The board is fixed to the building structure with adhesive mortar. Energy consumption and used ancillary materials during installation are negligible, and can be assumed as zero.

Wood pallets used for transportation of products to client is accounted for in A5. It is assumed that the pallets are incinerated at the nearest municipal incineration plant for energy recovery. The distance is assumed as 50 km and the transportation method assumed to be lorry**.**

Table 3 Transport scenario

Parameter	Value
Vehicle type used for transport	EURO 5 truck with a trailer with an average load 20 t
Average distance to the construction site	188 km
Weight of transported products	20 t
Volume capacity utilization factor	1

Product use and maintenance

B1-B7

This EPD does not cover the use phase. Air, soil and water impacts during the use phase have not been studied.

Product end of life

C1-C4

C1 Disassembly, demolition

The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible.

C2 Transport

Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common. Transport utilization model is described in Table 4.

C3, Waste processing

Insulation board has great potential for further processing, recycling. In the planned scenario, 100% take-back of products for subsequent energy recovery is included.

C4, Disposal

Module C4 impacts are zero as the products are considered to be 100 % collected for incineration.

Table 4 Scenario for end-of-life stage

Parameter	Value
Material collection by type	8946 g
Considered distance to the place of recovery	50 km
Planned mode of transport to the place of recovery	Lorry, 7.5 t
Amount of material for energy recovery	8946 g

Beyond the system boundaries D

D Benefits

Module considers the benefits of energy recovery which replaces district heat and electricity.

MANUFACTURING PROCESS

The figure 1 shows the diagram of the production line. Production includes processes such as: material sorting, removal of impurities, crushing, mixing of main raw materials, board moulding and pressing as well as packaging of the finished product.

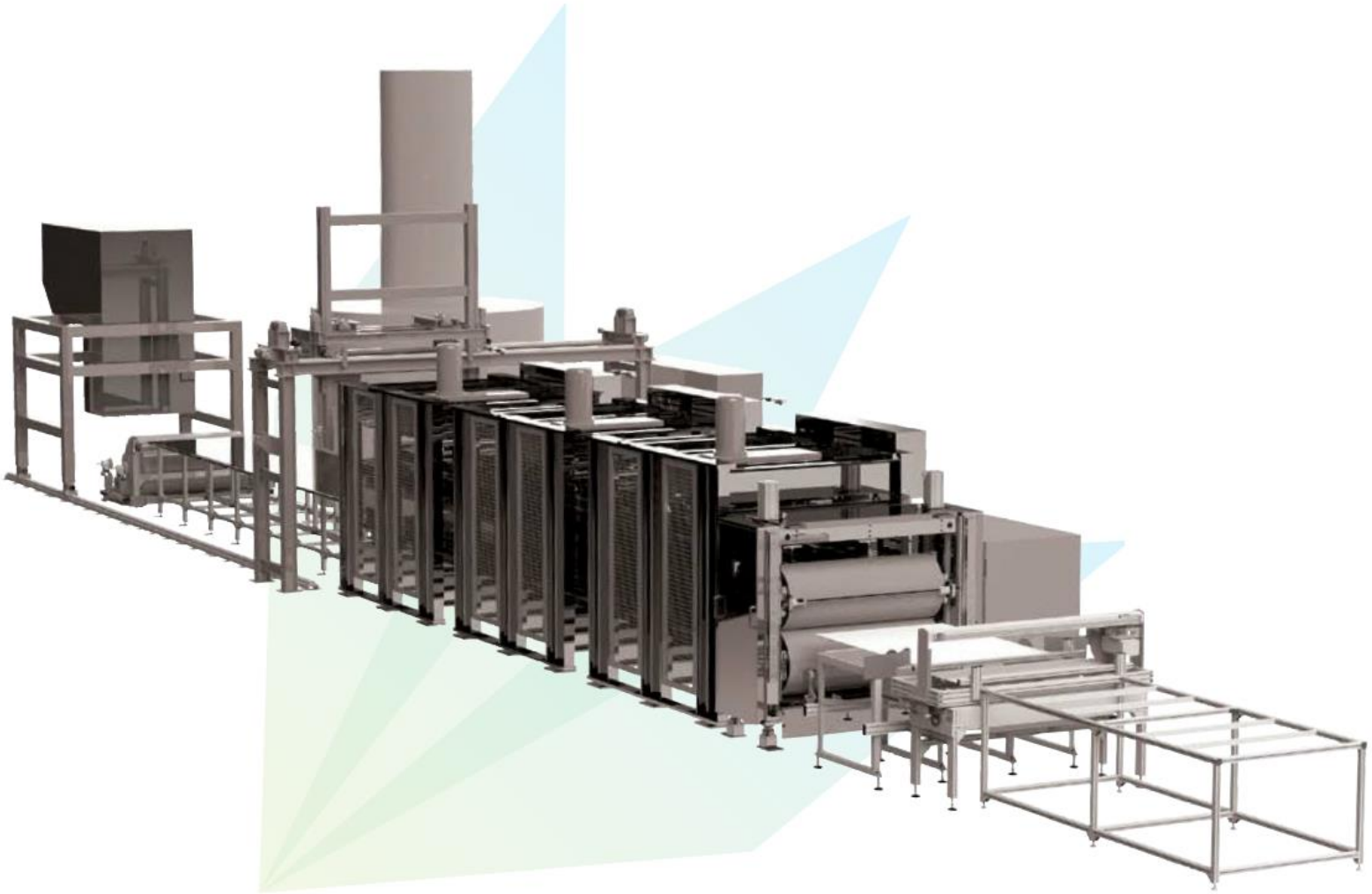


Figure 1 Manufacturing scheme

LIFE-CYCLE ASSESSMENT INFORMATION

Period data	2020

DECLARED AND FUNCTIONAL UNIT

Declared unit	1 m^2
Mass per declared unit	8.946 kg

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	3.8
Biogenic carbon content in packaging, kg C	0.56

SYSTEM BOUNDARY

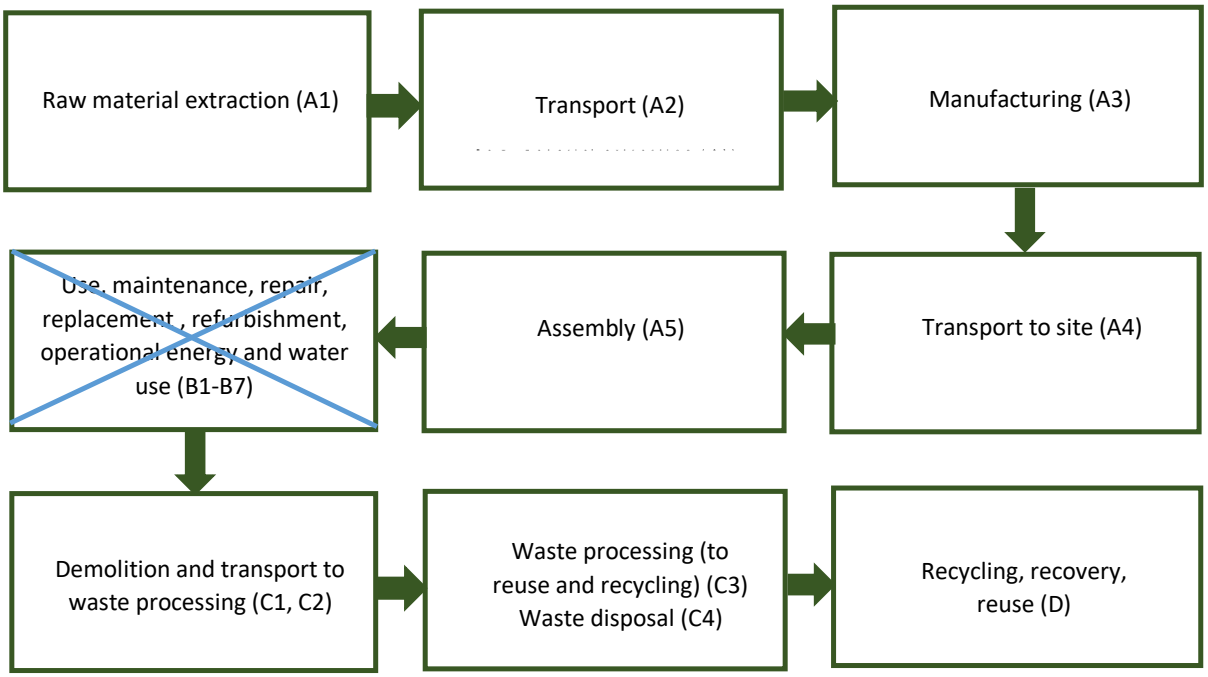
This EPD covers the *cradle to gate with options* scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Installation) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

System boundary (STN EN 15804+A2)

Product stage			Construction process stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction /demolition	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography																
EU	EU	SK	EU	EU								EU	EU	EU	EU	EU

Module not declared = MND

Life cycle stages diagram



CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and PCR. The study does not exclude any hazardous materials or substances.
The study includes all major raw material and energy consumption.

All inputs and outputs of the unit processes which data are available for which data is available are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total excluded input and output flows do not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution and end-of-life stages.

ALLOCATION, ESTIMATION AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.
In this study, as per EN 15804, allocation is conducted in the following order:

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology ‘allocation, cut-off by classification’. This methodology is in line with the requirements of the EN 15804 standard.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs.

All estimations and assumptions are given below:

- Module A1: Within the product stage accurate data has been used, with the exception of adhesive GecoFix S-50 (silicate adhesive) due to its absence in the database. In this case, it was modelled as close to reality as possible using proxy, representative datapoint.
- Module A3: The hall is heated primarily by production equipment (2 heated presses). In the winter months, 2 electric heaters with warm air (energy consumption approx. 2 x 10 kWh) are installed at the entrance gate. However, they are only switched on when the gate is opened. Electric heating is intermittent and they are not connected separately to the meter, it is not possible to determine exactly the total consumption per year only for heating. It is estimated that both heaters went for about 3 hours a day for 5 months. With a consumption of 10 kWh, their total consumption per year is 9,000 kWh, the consumption per 1 m2 of board is 0.025 kWh.
- Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality it may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation companies to serve the needs of other clients.
- Module A4: Transportation doesn't cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances and vehicle types are assumed according to the delivery in the last year.
- Module A5: The board is fixed to the building structure with adhesive mortar. Energy consumption and used ancillary materials during installation are negligible, and can be assumed as zero. It is assumed that wood pallets are incinerated at the nearest municipal incineration plant for energy recovery. The distance is assumed as 50 km and the transportation method assumed to be lorry.
- Module C1: The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible
- Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common.
- Module C3, C4, D: 100% of the end-of-life product is assumed to be recovered to energy. According to the manufacturer's information, Module C3 includes the incineration of the product. Module C4 impacts are zero as the products are considered to be 100 % collected for incineration. Module D considers the benefits of energy recovery which replaces district heat and electricity.

AVERAGES AND VARIABILITY

Any average and variation are not considered since this EPD refers to one specific product produced in one production plant.

LIFE CYCLE ASSESSMENT RESULTS

Core environmental impact indicators - EN 15804+A2

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP – total	kg CO2e	1,56E0	4,4E-1	-1,07E0	9,31E-1	1,76E-1	2,15E0	MND	0E0	7,46E-2	2,14E0	0E0	1,86E0
GWP – fossil	kg CO2e	1,44E0	4,4E-1	9,98E-1	2,87E0	1,78E-1	8,57E-2	MND	0E0	7,46E-2	7,83E-2	0E0	4,36E-2
GWP – biogenic	kg CO2e	1,23E-1	2,33E-4	-2,07E0	-1,95E0	1,29E-4	2,06E0	MND	0E0	3,98E-5	2,06E0	0E0	1,82E0
GWP – LULUC	kg CO2e	3,2E-3	1,59E-4	2,18E-3	5,53E-3	5,35E-5	6,78E-5	MND	0E0	2,64E-5	1,76E-4	0E0	-8,76E-4
Ozone depletion	kg	8,68E-8	9,96E-8	6,93E-8	2,56E-7	4,18E-8	6,5E-9	MND	0E0	1,69E-8	6,55E-9	0E0	-1,18E-7
Acidification	mol H+e	9,52E-3	1,79E-3	6,25E-3	1,76E-2	7,46E-4	2,76E-4	MND	0E0	3,05E-4	4,32E-4	0E0	-2,75E-3
EP-freshwater2)	kg Pe	6,6E-5	3,72E-6	6,54E-5	1,35E-4	1,44E-6	2,38E-6	MND	0E0	6,24E-7	8,17E-6	0E0	-4,43E-5
EP-marine	kg Ne	1,58E-3	5,31E-4	1,48E-3	3,59E-3	2,25E-4	6,79E-5	MND	0E0	9,05E-5	5,81E-5	0E0	-7,02E-4
EP-terrestrial	mol Ne	2,07E-2	5,87E-3	1,89E-2	4,54E-2	2,48E-3	7,52E-4	MND	0E0	1E-3	7,09E-4	0E0	-1,18E-2
POCP (“smog”)	kg	4,15E-3	1,8E-3	6,13E-3	1,21E-2	7,98E-4	2,37E-4	MND	0E0	3,06E-4	1,85E-4	0E0	-2,25E-3
ADP-minerals &	kg Sbe	7,98E-5	1,22E-5	1,21E-5	1,04E-4	3,03E-6	9,64E-7	MND	0E0	2,02E-6	3,04E-7	0E0	-8,18E-7
ADP-fossil	MJ	1,33E1	6,62E0	2,34E1	4,34E1	2,76E0	9,6E-1	MND	0E0	1,12E0	1,58E0	0E0	-6,2E0
Water use[1])	m3e depr.	5,35E-1	2,15E-2	5,98E-1	1,15E0	1,03E-2	1,84E-2	MND	0E0	3,62E-3	1,98E-2	0E0	-4,59E-2

EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all optional indicators except Particulate matter and Ionizing radiation, human health: The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.Eutrophication aquatic freshwater is reported as *kg PO4 eq,* although the reference given (“EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe”) uses the unit *kg P eq.*

Use of natural resources

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1E0	9,49E-2	1,8E1	1,91E1	3,48E-2	7,31E-2	MND	0E0	1,59E-2	2,66E-1	0E0	-1,99E1
Renew. PER as materials	MJ	5,19E-1	0E0	1,98E1	2,03E1	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,52E0	9,49E-2	3,78E1	3,94E1	3,48E-2	7,31E-2	MND	0E0	1,59E-2	2,66E-1	0E0	-1,99E1
Non-renew. PER used as energy	MJ	1,33E1	6,62E0	1,39E1	3,38E1	2,76E0	9,6E-1	MND	0E0	1,12E0	1,58E0	0E0	-6,2E0
Non-renew. PER used as materials	MJ	0E0	0E0	9,56E0	9,56E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-renew. PER	MJ	1,33E1	6,62E0	2,34E1	4,34E1	2,76E0	9,6E-1	MND	0E0	1,12E0	1,58E0	0E0	-6,2E0
Use of secondary materials	kg	7,21E0	0E0	3,23E-3	7,21E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Use of renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Use of non-renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m3	1,82E-2	1,13E-3	4,38E-3	2,37E-2	5,75E-4	2,9E-4	MND	0E0	1,92E-4	4,95E-4	0E0	-3,63E-4

End of life - Waste

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste	kg	7,41E-2	6,8E-3	5,52E-2	1,36E-1	2,68E-3	4,79E-3	MND	0E0	1,14E-3	0E0	0E0	8,87E-3
Non-hazardous waste	kg	2,35E0	4,59E-1	1,46E0	4,27E0	2,97E-1	1,53E-1	MND	0E0	7,84E-2	0E0	0E0	1,34E0
Radioactive waste	kg	2,93E-5	4,54E-5	3,97E-5	1,14E-4	1,9E-5	4,25E-6	MND	0E0	7,71E-6	0E0	0E0	-5,72E-6

End of life - Output flows

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Components for reuse	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy recovery	kg	0E0	0E0	0E0	0E0	0E0	1,25E0	MND	0E0	0E0	8,95E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0

Environmental Impacts – GWP-GHG - The International EPD System

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP – GHG	kg CO2e	1,44E0	4,4E-1	9,98E-1	2,87E0	1,78E-1	8,57E-2	MND	0E0	7,46E-2	7,83E-2	0E0	4,36E-2

This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator Is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

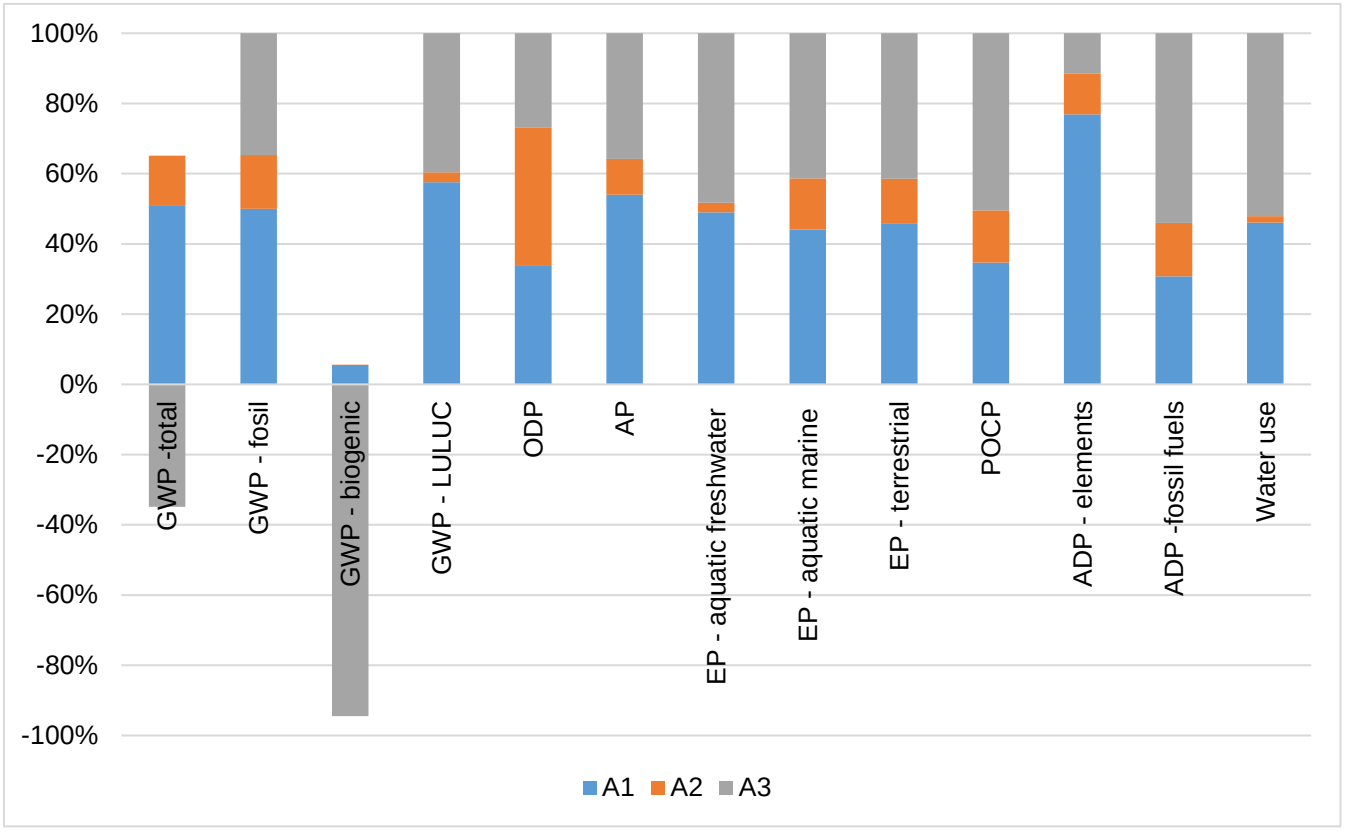
Scenario parameter	Value
Electricity data source and quality	Heat and power co-generation, wood chips, (Reference product: electricity, high voltage) Slovak Republic, Ecoinvent 3,6, year: 2019
Electricity CO2e / kWh	0.065

Transport scenario documentation (A4)

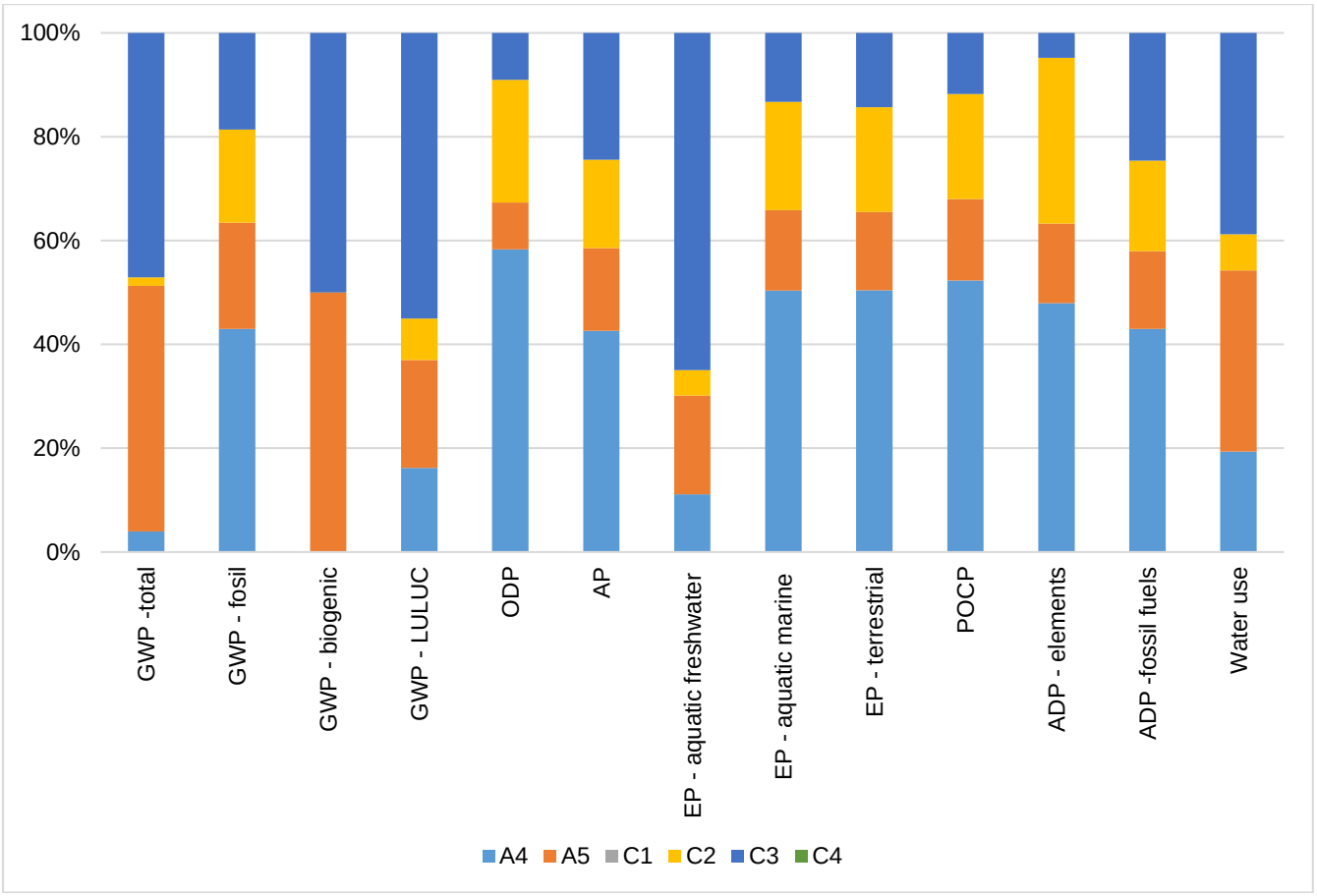
Scenario parameter	Value
Specific transport CO2e emissions, kg CO2e / tkm	0.0901
Average transport distance, km	188
Capacity utilization (including empty return) %	100
Bulk density of transported products	2900 kg/m^3
Volume capacity utilization factor	1

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	8.946
Collection process – kg collected with mixed waste	-
Recovery process – kg for re-use	-
Recovery process – kg for recycling	-
Recovery process – kg for energy recovery	8.946
Disposal (total) – kg for final deposition	-
Scenario assumptions e.g. transportation	End-of-life product is transported 50 km with an average lorry.



Percentage of modules A1-A3 on environmental impacts for 1 m² of the board



Percentage of modules A4, A5, C1-C4 on environmental impacts for 1 m² of the board

ADDITIONAL INFORMATION

BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

EN 15804+A2 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

The CEN standard EN 15804+A2 serves as the core PCR. In addition, the EPD International PCR 2019:2014 version 1.11 (2021-02-05) is used.

EPD. General Programme Instructions of the international EPD® system. Version 4.0

DATA REFERENCES

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LCA background report, 21.01.2022

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Brown L.J., Collard F.X., Gottumukkala L.D., Görgens J. Fermentation-pyrolysis of fibre waste from a paper recycling mill for the production of fuel products. Waste Management, 2021

ADDITIONAL INFORMATION

ABOUT THE MANUFACTURER

The company GreenCon, Inc. was founded in 2007 with a vision of a new process of production of building materials. In the beginning, there was an effort to take global recycling to a higher level and at the same time create a product that will have versatile use in construction. The company is proud that it contributes to the sustainability of resources through environmentally friendly production and production from 100% recyclable products. It brings to the market a new technology for the production of building materials that saves the environment. The main production inputs are recyclable materials from industrial processes that meet the strictest hygiene standards. Production takes place in an environmentally friendly process, without use and any harmful chemicals. The resulting product is GECON boards, which with their properties and price surpass the competition. European Union countries are our main markets in the following order: the Czech Republic, Slovakia, Austria and Hungary.

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	GreenCon International, s.r.o.
EPD author	Silvia Vilčeková, Eva Krídlová Burdová, Salvis, s.r.o.
EPD verifier	Bárbara M Civit
EPD program operator	EPD International AB
Background data EPD-034	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
LCA software	The LCA and EPD have been created using One Click LCA EPD Generator for Wood and Plant Fiber Based Products.

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? Read more online.

VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Bárbara M Civit
EPD verification started on	2022-01-24
EPD verification completed on	2022-03-18
Supply-chain specific data %	>80 % of A1-A3 GWP-GHG
Approver of the EPD verifier	The International EPD System

Author & tool verification	Answer
EPD author	Silvia Vilčeková, Eva Krídlová Burdová, Salvis, s.r.o.
EPD author training completion	30.9.2020
EPD Generator module	Wood and Plant Fiber based Products
Independent software verifier	Teija Käpynen, Envineer Oy
Software verification date	11 August 2020

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Bárbara M Civit

ANNEX 1

Environmental impacts - EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	1,41E0	4,36E-1	9,5E-1	2,79E0	1,76E-1	8,39E-2	MND	0E0	7,39E-2	7,7E-2	0E0	6,5E-2
Ozone Depletion Pot.	kg CFC11e	7,11E-8	7,93E-8	6,16E-8	2,12E-7	3,32E-8	5,71E-9	MND	0E0	1,35E-8	7,7E-9	0E0	-9,14E-8
Acidification	kg SO2e	7,54E-3	8,84E-4	4,7E-3	1,31E-2	3,61E-4	1,87E-4	MND	0E0	1,5E-4	3,7E-4	0E0	-1,78E-3
Eutrophication	kg PO4 3e	3,06E-3	1,82E-4	1,62E-3	4,87E-3	7,3E-5	1,9E-4	MND	0E0	3,07E-5	2,57E-4	0E0	-3,57E-4
POCP (“smog”)	kg C2H4e	3,15E-4	5,81E-5	4,8E-4	8,54E-4	2,29E-5	1,48E-5	MND	0E0	9,84E-6	1,52E-5	0E0	-8,72E-5
ADP-elements	kg Sbe	7,98E-5	1,22E-5	1,21E-5	1,04E-4	3,03E-6	9,64E-7	MND	0E0	2,02E-6	3,04E-7	0E0	-8,18E-7
ADP-fossil	MJ	1,33E1	6,62E0	2,34E1	4,34E1	2,76E0	9,6E-1	MND	0E0	1,12E0	1,58E0	0E0	-6,2E0