

GlobalEPD

A VERIFIED ENVIRONMENTAL DECLARATION



Environmental
Product
Declaration

EN ISO 14025:2010

EN 15804:2012+A2:2020

AENOR

Honext Material S.L.

HONEXT® Boards

First issue date: 2023-04-17
Modification date: 2026-05-06
Expiration date: 2028-04-16
The declared validity is subject to registration and publication in www.aenor.com

Registration code: GlobalEPD EN15804-036 rev2

Honext Material S.L.

HONEXT®

Circular by design.



The holder of this Declaration is responsible for its content, as well as for keeping during the period of validity the supporting documentation that justifies the data and statements included in it.

Declaration Holder

HONEXT®

Honext Material S.L.
Ctra.Terrassa a Manresa Km
28,2 Parcela 2,9
08233 Barcelona Spain

Tel. (+34) 623 37 92 38
Mail info@honextmaterial.com
Web honextmaterial.com

LCA Study



Eco intelligent growth Carrer
Amposta, 14-18 3-4a 08174
Sant Cugat del Vallés
Barcelona Spain

Tel. (+34) 934 19 90 80
Mail info@ecointelligentgrowth.net
Web <https://ecointelligentgrowth.net/es/>

GlobalEPD Program Administrator

AENOR

AENOR CONFÍA, S.A.U.
C/Génova 6
28004 – Madrid
Spain

Tel. (+34) 902 102 201
Mail aenordap@aenor.com
Web www.aenor.com

AENOR is a founding member of ECO Platform, the European Association of Environmental Product Declaration Verification Programs.

The European Standard EN 15804:2012+A2:2020 serves as the basis for CPRs.

Independent verification of the declaration and the data, in accordance with the Standard EN ISO 14025:2010

Internal

External

Verification Body

AENOR

Product certification body accredited by ENAC with accreditation No.1/C-PR468

1. General information

1.1. The Company

Honext Material S.L. was created in 2011 by researchers from the Polytechnic University of Catalonia and three generations of the Merino family: Ferran, Pere and Pol Merino. After 10 years of development, Honext produces its boards using waste as raw material in the company's first functional factory, integrated in a landfill in Vacarisses (Barcelona, Spain).

Today, Honext's main raw material is sewage sludge from paper mills, the volume of which continues to increase as paper recycling rates rise.

In the EU alone, paper mills generate more than 8 million tons of this waste each year.

The HONEXT® industrial process is of biotechnological origin, generates no waste and uses no resins. It is a process that strengthens and protects the bonds between cellulose fibers, producing 100% recyclable boards with no added VOC emissions, such as formaldehyde.

HONEXT® Boards have a wide range of applications for interior furnishings and construction.

1.2. Scope of the Declaration

This environmental product declaration describes environmental information related to the life cycle of a board made from cellulosic waste. This board has the ability to be cut, drilled or sanded in the same way as a wood board.

1.3. Life cycle and compliance

This EPD has been developed and verified in accordance with the UNE-EN ISO 14025:2010 Standards, UNE-EN15804:2012+A2:2020. This EPD includes the life cycle stages indicated in Table 1.

This EPD may not be comparable with those developed in other programs or according to different reference documents; in particular, it may not be comparable with EPDs not prepared in accordance with UNE-EN 15804.

Similarly, EPDs may not be comparable if the origin of the data is different (e.g. databases), not all relevant information modules are included or they are not based on the same scenarios.

The comparison of construction products should be made on the same function, applying the same functional unit and at the level of the building (or architectural or engineering work), i.e., including the behavior of the product throughout its life cycle, as well as the specifications of section 6.7.2. of the UNE-EN ISO 14025 Standard.

1.4 Differences compared to previous versions of this EPD

This EPD is modified to update the logo and data of the product performance.

Module	Production Stage			Construction Stage		Stage of use							End-of-life stage				Beneficios y cargas más allá del sistema
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared module	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	ES	ES	ES	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	-
Specific data used	>90% GWP					-	-	-	-	-	-	-	-	-	-	-	-
Product Type	Class C and Class B (+10%)					-	-	-	-	-	-	-	-	-	-	-	-
Product center	1 single production center					-	-	-	-	-	-	-	-	-	-	-	-

X: Module included in LCA. ND: Module not declared. NR: Not relevant. ES: Spain. GLO: Global.

Table 1: System boundary. Information modules considered.



2. The product

2.1. Product identification

The manufacturer declares the following performance for a 12 mm thick board with a density of 510-600 kg/m³, with the performance shown in Table 2. The board can also be modified to present a Class B-s1,d0 in its reaction to fire, so the results for both boards will be presented.

2.2. Product performance

The manufacturer declares the following Class C and Class B product performance.

Table 1. Product performance

Characteristic	Class C	Class B
Raw Material	100% paper waste and sludge	97% paper waste and sludge
Recyclability	100%	100%
Certifications	Cradle to Cradle GOLD level	Cradle to Cradle GOLD level
Thickness	12 mm	12 mm
Dimensions	1.220 x 2.440 mm	1.220 x 2.440 mm
Density	510-600 kg/m ³	510-600 kg/m ³
Hazardous substance content and/or emission at 28 days	85 µg/m ³	85 µg/m ³
Humidity	7,6%	7,6%
Vapor permeability	µ = 2,7	µ = 2,7
Reaction to fire	Class C-s1,d0	Class B-s1,d0
Acoustic insulation	24 dB	24 dB
Acoustic absorption	αw=0,15	αw=0,15
Thermal conductivity	0,093 W/m-K	0,093 W/m-K

2.3. Product composition

The manufacturer declares the following product composition Class C-s1,d0 and Class B-s1,d0.

Table 2. Composition of Class C product

Product components. Class C	Distribution of the raw materials	Post-consumer material, weight, % of raw material	Renewable material, weight, % of raw material
Paper Sludge	68,3%	100%	0,00%
Cardboard	31,7%	100%	100%
TOTAL	100%	100%	31,7%
Packaging materials	Weight, kg	Weight, % (versus 1 m ³ product of product)	
Cardboard	2,46	0,45%	
Recycled PET	0,28	0,05%	
Pallet	16,1	2,98%	
TOTAL	18,8	3,48%	

Table 3: Composition of Class B product.

Product component Class B.	Distribution of raw materials	Post-consumer material, weight, % of raw material	Renewable material, weight, % of raw material
Paper Sludge	65,2%	100%	0,00%
Cardboard	31,7%	100%	100%
Silicates	3,06%	0%	0%
TOTAL	100%	96,9%	31,7%
Packaging Materials	Weight, kg	Weight, % (versus 1 m ³ product of product)	
Cardboard	2,46	0,45%	
Recycled PET	0,28	0,05%	
Pallet	16,1	2,98%	
TOTAL	18,8	3,48%	



3. Information on LCA

3.1. Life cycle analysis

The life cycle analysis report for the WTP of 12 mm thick HONEXT® board production was carried out by the company Eco Intelligent Growth. The study was carried out using data from a single factory located in Vacarisses, considering its actual production data.

The LCA study follows the recommendations and requirements of international standards ISO 14040:2006 and ISO 14044:2006.

The European Standard UNE-EN 15804:2012+A2:2020 has been used as the reference CPR.

The scope of the study is cradle to gate with options, including transport stage A4, stages C1 to C4 and module D.

3.2. Declared unit

The declared unit is 1 m³ of board.

3.3. Reference useful life

The useful life of the product is considered to be 25 years.

3.4. Cut-off and assignment criteria

The cut-off criterion is 1% of renewable and non-renewable primary energy use; and 1% of the total incoming mass, in a

unit process. The total of the input flows not considered per module must be a maximum of 5% of the energy use and mass.

As a general rule, the gross weight/volume of all materials used in the production process of the board has been included, so that at least 99% of the total weight of the products used for the declared unit has been included. There has been no exclusion of energy consumption.

3.5. Representativeness and quality of data

To model the board manufacturing process, production data from the Honext Material S.L. factory for the years 2021 and 2022 were used. From this factory we have obtained data on: material and energy consumption; air emissions, discharges and waste generation. With this information, the LCA of the board production has been developed, differentiating the phases:

- A1 - A3, from the production of board raw materials (A1), the transportation of board raw materials to the factory (A2) up to the production of the board in the Honext factory, as well as the auxiliary products necessary for its manufacture (A3).
- A4, from board transportation to customers.
- C1, for the dismantling of the board at the end of its useful life.
- C2, transportation of the end-of-life board to a treatment center.
- C3, of operations for the treatment of waste generated.

- C4, of operations for the elimination of non-recovered waste sections generated.

It has been considered that the material and energy consumption and emissions required to produce a given board are directly proportional to the quantity of its materials. Consequently, the values of the environmental profile corresponding to 1 m³ of 12 mm thick board have been deduced in proportion to the weight of the materials it contains.

Where necessary, the Ecoinvent 3.8 (2021) database, which is the most current version at the time of the LCA, was used. All LCA data were processed with SimaPro 9.3 software and the environmental impact categories lost by PCR were obtained.

All data used in the LCA have been provided by Honext Material S.L. The following criteria have been applied to select the most representative processes of the databases:

- The data should be representative of the technological development actually applied in the manufacturing processes. In case no information was available, a data representative of an average technology has been chosen.
- European or global average data in Ecoinvent.
- The data should be as current as possible. To assess the quality of the primary data of the board production process, the following criteria are applied of evaluation semi-quantitative evaluation of the quality of the data considering geographical, technical and temporal quality.

The results obtained are as follows:

- Very good data integrity as more than 90% of the materials and inputs to the system are covered.
- Very good temporal representativeness since the data of the production process are for 12 months between 2021 and 2022, which is a representative year.
- Technological representativeness is very good since the data are from the facilities themselves, the rest coming from generic databases such as Ecoinvent.
- Geographical representativeness is good since most of the data are from the facilities themselves, although others come from generic databases with European or global locations.
- Very low data uncertainty since most of the data are from the facilities themselves; others come from databases of recognized prestige.

The uncertainty of the data is considered very low for the following reasons:

- Data on weights and quantities of materials and water used were obtained directly from the facilities.
- Energy and water consumption data are obtained from the meter.

Consequently, the data of materials used and energy and water consumption data are accurate. When it has been necessary to make allocations, the allocation based on weight of material produced has been applied, which is the first criterion recommended in the PCR; and which has also been considered adequate by the production managers of the facilities that have collaborated in the study.

4. System limits, scenarios and additional technical information

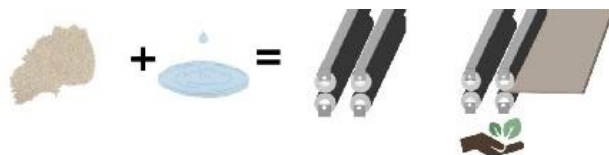
4.1. Upstream processes (A1-A2)

The board mill receives the components necessary for its manufacture, which are: sludge from paper mill wastewater treatment plants; and post-consumer and post-industrial cardboard. In the case of manufacturing Class B-s1,d0 fire reaction boards, silicates are also used as raw material.

The materials are dosed according to the appropriate formula in each case and mixed. The mixture is then moistened and transferred to the forming machines.

The heat and electricity needed in the manufacturing plant come from combustion for cogeneration from biogas, generated in a waste treatment plant located in the same industrial park. The water required for manufacturing is obtained from the treatment of leachate generated at the waste treatment plant, so that part of the raw material, heat, electricity and water come from waste treatment.

The transport of raw materials has been evaluated, coming from a distance of less than 50 km and considering a transport lorry 16-32 metric ton, euro 6 {RER}, in most cases.



Raw materials are mixed to subsequently form HONEXT boards.

4.2. Product manufacturing (A3)

During the manufacturing process, the inputs are fed and the outputs shown in Figure 2 are generated, where the different processes of mixing, forming, drying, cutting and packaging take place to generate the board.

The raw materials are mixed with the different additives in different agitated baths, to be later shaped and cut to the size of the commercialized board.

The water added to the process is subsequently removed in a drying kiln until the desired moisture content is reached.

This water, in the form of steam, is the only direct emissions from the plant into the air, since heat and electricity are generated externally in a biogas cogeneration plant.

The packaging consists of cardboard protection and recycled PET strapping, together with a wooden pallet that is reused. The rest of the non-evaporated water consumed in the plant is sent to the industrial park's wastewater treatment plant and the waste generated is managed by specific managers, either in the industrial park itself or at a distance of less than 40 km considering transport Transport, freight, lorry 16-32 metric ton, euro 6 {RER}.



Once formed and dried, the HONEXT boards are cut for commercialization.

Figure 2: Process diagram of board production.

4.3. Transport to customer (A4)

The transportation phase of the boards to the customers has been calculated using the average sales data for 2021 and 2022. The average distance has been calculated taking into account the number of boards and the distance to which each of them has been shipped, generating an average of 825 km.

Transportation is carried out by road vehicles with the following information:

Parameters	Values per declared unit (1m ³ of product)
Vehicle and fuel type	Transport, freight, lorry 16-32 metric ton, Euro6 (RER) / Market for transport, freight, lorry 16-32 metric ton, Euro6 / Cut-off, U. Transport, freight, lorry 3.5-7.5 metric ton, Euro6 (RER) / Market for transport, freight, lorry 3.5-7.5 metric ton, Euro6 / Cut-off, U.
Distance	km by truck: 846
Capacidad utilizada (incluyendo el retorno)	40% volume (round trip)
Density	HONEXT® Board: 510-600 kg/m ³
Useful capacity factor	1

Table 4: Parameters of the model used for finished product transportation.

4.4. Customer installation (A5)

Considering the diverse and multiple applications by product type, the average representative scenario selected considers that the most extensive use is as a surface coating.

Since the final installation will depend on the location and type of use and may require additional finishing (e.g. painting) depending on the design and the selected functional use, there is no specific average scenario for

model the installation process, considering a standard quantity of finished product and ancillary materials for installation, use of power tools, and material waste or loss rates.

The LCA study has excluded this module from the impact analysis estimation.

4.5. Use phase (B1 to B7)

According to their design features and components, the products studied have a service life of at least 30 years. These products do not require maintenance or consumption of water, heat or electricity during their use phase, followed by a qualitative analysis of the impacts during the use phase:

- B1. Use. Based on the nature of the components of the finished product, the products can be categorized as a low Volatile Organic Compounds (VOCs) emitting product.
- B2. Maintenance. No maintenance is required.
- B3. Repair. Based on the design conditions of the product and its use, no recommended frequency of repair or repair statistics are determined for the creation of an average scenario. The impact is declared as null.
- B4. Substitution. No replacement tasks required for the useful life of the finished product are identified.
- B5. Rehabilitation. No rehabilitation tasks required for the useful life of the finished product are identified.
- B6. Energy use in service. By its nature, the final product does not generate energy use in its use phase. The associated impact is determined to be zero.

- B7. In-service water use. By its nature, the final product does not generate water use in its use phase. The associated impact is determined to be null.

4.5. End-of-life phase

In this case, and given the nature of the product, similar to that of a wooden MDF board, the end of life has been assimilated to one of these products by evaluating a scenario of 80.4% recycling, 6.1% as energy recovery, 12% as incineration and 1.5% as landfill according to the publication of the H2020 project "Absorbing the Potential of Wood Waste in EU Regions and Industrial Bio-based Ecosystems-BioReg" document" D1.1 EUROPEAN WOOD WASTE STATISTICS REP ORTFOR RECIPIENT AND MODEL REGIONS". for europe (<https://ec.europa.eu/research/participants/documents/>). The conceptual approach for the end-of-life phase modules is described below, while the assumptions used for the modeling of each module are summarized below.

- C1. Demolition. There are no statistics that demonstrate usual practices. It should be understood that, given the nature of the product, dismantling is necessary for reuse or recovery of the material at the end of its useful life. A predetermined process has been considered from Bozdağ, Ö & Seçer, M. (2007) which indicates that the energy consumption for a demolition process is 0.01 kWh/kg, resulting in 5.4 kWh/m³ of board. This amount is reduced by 80% because the resistance of the board is much lower than that of the concrete, associated with the previous value, resulting in a value of 1.1 kWh/m³.

The energy source considered was the consumption of diesel fuel and the model used was Diesel, burned in building machine. {GLO}| market for | Cut-off, U.

- C2. Transportation. Given the wide distribution of the product in the international market, transportation distances to final disposal sites for inert waste are variable. Considering national and local conditions, an average scenario of 50 km of land transportation (road) is assumed, using the default processes from the Ecoinvent 3.8 database. This transport considers a mass of 540 kg/m³, resulting in 27,001 kg-km Transport, freight, lorry 7.5-16 metric ton, euro6 {RER}| market for transport, freight, lorry 7.5-16 metric ton, EURO6 | Cut-off, U.
- C3. Waste processing. Due to the nature of the material, a processing similar to that of wood has been considered, shredding it into chips, considering a process applied to 540 kg of Wood chipping, industrial residual wood, stationary electric chipper {RER}| processing | Cut-off, U.
- C4. Final disposal. In accordance with common practices in the local market, demolition waste is usually deposited as inert material in a sanitary landfill, with no material recovery actions.

Module	Parameter	Unit (per declared unit)	Data
C1 Demolition	Collection process specified by type	kg collected separately	540
		kg collected mixed with other construction waste	0
C2 Transportation	Type of vehicle used for the transport specified for all types of waste and output materials	Truck	Freight, lorry 16-32 metric ton, Euro6 (diesel)
	Diesel consumption	kg/t.km	0,04
	Distance from the construction site	km	50
	Capacity utilization (including return)	%	100% volume (round trip)
	Product density	kg/m ³	510-600
	Useful capacity factor	-	1
C3 Waste processing	Recovery system specified by type	kg to recycling	434
C4 Final disposition	Type-specific elimination	kg to inceneration	97,7
		kg a landfill	4,90

Table 5: Summary of end-of-life scenario.

5. LCA and LCI Environmental Parameter Statements

The following table includes the LCA parameters for the board defined in this EPD in both its environmental impact categories and its resources for the class C-s1,d0 model.

The estimated impact results are relative and do not indicate the final value of the impact categories, nor do they refer to threshold values, safety margins or risks.

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
GWP- Total	kg CO ₂ eq	-7,30E+02	6,38E+01	3,34E-01	4,72E+00	6,58E+02	2,10E+02	NE
GWP-Fossil	kg CO ₂ eq	9,25E+01	6,38E+01	3,33E-01	4,72E+00	3,54E+00	5,03E+01	NE
GWP-Biogenic	kg CO ₂ eq	-7,51E+02	5,80E-02	2,97E-04	4,26E-03	6,55E+02	1,60E+02	NE
GWP - Iuluc	kg CO ₂ eq	1,26E+02	5,06E-04	4,84E-06	3,72E-05	8,25E-03	4,58E-04	NE
ODP	kg CFC11eq	1,23E-05	1,48E-05	7,52E-08	1,09E-06	2,98E-07	3,14E-07	NE
AP	mol H+ eq	6,63E-01	1,26E-01	3,61E-03	9,22E-03	1,93E-02	2,70E-02	NE
EP- Freshwater	kg P eq	1,65E-02	3,80E-05	2,62E-07	2,80E-06	3,78E-04	3,33E-05	NE
EP - Marine	kg N eq	8,04E-01	2,10E-02	1,62E-03	1,51E-03	2,46E-03	1,24E-02	NE
EP - Terrestrial	mol N eq	2,15E+00	2,34E-01	1,77E-02	1,69E-02	3,03E-02	1,27E-01	NE
POCP	kg NMVOC eq	3,73E-01	6,27E-02	4,24E-03	4,49E-03	7,20E-03	3,00E-02	NE
ADP- Minerals and metals	kg Sb eq	2,23E-03	3,77E-06	1,49E-07	2,77E-07	4,31E-06	6,26E-06	NE
ADP - Fossil	MJ	1,20E+03	9,05E+02	4,62E+00	6,66E+01	7,42E+01	2,26E+01	NE
WDP	m3 depriv.	7,38E+01	-1,99E-01	8,96E-04	-1,47E-02	7,83E-01	7,66E+00	NE
Acronyms	Global Warming Potential; ODP: Ozone Depletion Potential; AP: Acidification Potential; EP: Eutrophication Potential; POCP: Photochemical Ozone Creation Potential; ADP minerals and metals: Abiotic Depletion Potential of non-fossil resources; ADP-fossil: Abiotic Depletion Potential of fossil resources; WDP: Water Deprivation Potential; NE: Not Evaluated							

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	1,61E+03	1,27E+00	7,02E-03	9,31E-02	1,26E+01	6,90E-01	NE
PERM	MJ	3,95E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
PERT	MJ	5,56E+03	1,27E+00	7,02E-03	9,31E-02	1,26E+01	6,90E-01	NE
PENRE	MJ	1,74E+02	9,56E-05	1,3E-06	7,03E-06	1,86E-04	9,16E-05	NE
PENRM	MJ	9,19E+03	9,61E+02	4,91E+00	7,07E+01	7,78E+01	2,46E+01	NE
PENRT	MJ	9,36E+03	9,61E+02	4,91E+00	7,07E+01	7,78E+01	2,46E+01	NE
SM	kg	8,83E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
NRSF	MJ	4,77E+04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
FW	m3	2,52E+00	1,36E-03	7,30E-05	9,97E-05	6,16E-02	1,03E-01	NE
Acronyms	PERE: Use of renewable primary energy resources excluding resources used as raw materials. PERM: Use of renewable primary energy resources used as feedstock. PERT: Total use of renewable primary energy resources. PENRE: Non-renewable primary energy use excluding resources used as raw materials. PENRM: Use of non-renewable primary energy resources used as feedstock. PENRT: Total use of non-renewable primary energy resources. SM: Use of secondary materials. RSF: Use of renewable secondary fuels. NRSF: Use of secondary fuels. FW: Net water use NE: Not Evaluated							

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
HWD	kg	2,19E-03	2,40E-03	1,21E-05	1,76E-04	2,04E-05	7,49E-05	NE
NHWD	kg	2,62E+01	4,83E-02	3,41E-04	3,55E-03	1,20E-01	3,41E+01	NE
RWD	kg	5,73E-03	6,56E-03	3,33E-05	4,82E-04	5,33E-04	6,81E-05	NE
Acronyms	HWD: Hazardous waste disposed of. NHWD: Non-hazardous waste disposed of. RWD: Radioactive waste disposed of. NE: Not Evaluated							

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,61E+01	0,00E+00	NE
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,34E+02	0,00E+00	NE
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,77E+01	0,00E+00	NE
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
Acronyms	CRU: Components for reuse. MRF: Materials for recycling. MER: Materials for energy recovery. EE: Energy Exported. NE: Not Evaluated							

Potential environmental impact - additional indicators (EN 15804+A2)

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
PM	disease inc.	1,02E-05	4,30E-06	9,81E-08	2,64E-07	4,27E-08	2,14E-07	NE
IRP	kBq U-235 eq	4,48E+00	3,98E+00	2,02E-02	2,93E-01	6,53E-01	5,28E-02	NE
ETP	CTUe	9,26E+03	3,64E+02	1,56E+00	2,59E+01	2,76E+01	2,38E+02	NE
HTPC	CTUh	8,76E-08	4,75E-09	2,01E-11	3,21E-10	6,16E-10	1,24E-08	NE
HTPNC	CTUh	2,21E-06	5,69E-07	1,59E-09	3,56E-08	2,85E-08	5,17E-07	NE
SQP	Pt	1,01E+04	2,49E+00	1,48E-02	1,83E-01	1,44E+01	6,00E+00	NE
Acronyms	PM: Potential incidence of disease due to pm emissions. IRP: Potential human exposure efficiency in relation to U235. ETP: Ecosystem Comparative Potential Toxic Potential Unit. HTPC: Potential human comparative toxic unit. HTPNC: Toxic Unit comparative potential for humans. SQP: Soil Quality Potential Index. NE: Not Evaluated							

The following table includes the LCA parameters for the board defined in this EPD in both its environmental impact categories and its resources for the class B-s1,d0 model.

The estimated impact results are relative and do not indicate the final value of the impact categories, nor do they refer to threshold values, safety margins or risks.

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
GWP- Total	kg CO ₂ eq	-7,09E+02	6,38E+01	3,34E-01	4,72E+00	6,46E+02	2,07E+02	NE
GWP-Fossil	kg CO ₂ eq	1,03E+02	6,38E+01	3,33E-01	4,72E+00	3,54E+00	5,03E+01	NE
GWP-Biogenic	kg CO ₂ eq	-7,41E+02	5,80E-02	2,97E-04	4,26E-03	6,42E+02	1,57E+02	NE
GWP - luluc	kg CO ₂ eq	1,24E+02	5,06E-04	4,84E-06	3,72E-05	8,25E-03	4,58E-04	NE
ODP	kg CFC11eq	1,30E-05	1,48E-05	7,52E-08	1,09E-06	2,98E-07	3,14E-07	NE
AP	mol H ⁺ eq	8,05E-01	1,26E-01	3,61E-03	9,22E-03	1,93E-02	2,70E-02	NE
EP- Freshwater	kg P eq	1,66E-02	3,80E-05	2,62E-07	2,80E-06	3,78E-04	3,33E-05	NE
EP - Marine	kg N eq	8,22E-01	2,10E-02	1,62E-03	1,51E-03	2,46E-03	1,24E-02	NE
EP - Soil	mol N eq	2,44E+00	2,34E-01	1,77E-02	1,69E-02	3,03E-02	1,27E-01	NE
POCP	kg NMVOC eq	4,46E-01	6,27E-02	4,24E-03	4,49E-03	7,20E-03	3,00E-02	NE
ADP- Mineras and metals	kg Sb eq	2,26E-03	3,77E-06	1,49E-07	2,77E-07	4,31E-06	6,26E-06	NE
ADP - Fossil	MJ	1,30E+03	9,05E+02	4,62E+00	6,66E+01	7,42E+01	2,26E+01	NE
WDP	m3 depriv.	7,37E+01	-1,99E-01	8,96E-04	-1,47E-02	7,83E-01	7,66E+00	NE
Acronyms	GWP: warming potential; ODP: ozone depletion potential; AP: acidification potential; EP: eutrophication potential; POCP: tropospheric ozone formation potential; ADP-minerals and metals: non-fossil abiotic resource depletion potential; ADP-fossil: fossil abiotic resource depletion potential. WDP: water deprivation potential NE: Not Evaluated							

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	1,59E+03	1,27 E+00	7,02E-03	9,31E-02	1,26E+01	6,99E-01	NE
PERM	MJ	3,95E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
PERT	MJ	5,55E+03	1,27E+00	7,02E-03	9,31E-02	1,26E+01	6,90E-01	NE
PENRE	MJ	1,71E+02	9,56E-05	1,30E-06	7,03E-06	1,86E-04	9,16E-05	NE
PENRM	MJ	8,93E+03	9,61E+02	4,91E+00	7,07E+01	7,78E+01	2,46E+01	NE
PENRT	MJ	9,11E+03	9,61E+02	4,91E+00	7,07E+01	7,78E+01	2,46E+01	NE
SM	kg	8,56E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
NRSF	MJ	5,58E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
FW	m3	2,52E+00	1,36E-03	7,30E-05	9,97E-05	6,16E-02	1,03E-01	NE
Acronyms	PERE: Use of renewable primary energy resources excluding resources used as raw materials. PERM: Use of renewable primary energy resources used as feedstock. PERT: Total use of renewable primary energy resources. PENRE: Non-renewable primary energy use excluding resources used as raw materials. PENRM: Use of non-renewable primary energy resources used as feedstock. PENRT: Total use of non-renewable primary energy resources. SM: Use of secondary materials. RSF: Use of renewable secondary fuels. NRSF: Use of secondary fuels. FW: Net water use. NE: Not Evaluated							

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
HWD	kg	2,22E-03	2,40E-03	1,21E-05	1,76E-04	2,04E-05	7,49E-05	NE
NHWD	kg	2,64E+01	4,83E-02	3,41E-04	3,55E-03	1,20E-01	3,41E+01	NE
RWD	kg	6,06E-03	6,56E-03	3,33E-05	4,82E-04	5,33E-04	6,81E-05	NE
Acronyms	HWD: Hazardous waste disposed of. NHWD: Non-hazardous waste disposed of. RWD: Radioactive waste disposed of. NE: Not Evaluated							

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,61E+01	0,00E+00	NE
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,34E+02	0,00E+00	NE
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,77E+01	0,00E+00	NE
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	NE
Acronyms	CRU: Components for reuse. MRF: Materials for recycling. MER: Materials for energy recovery. EE: Energy Exported. NE: Not Evaluated							

Potential environmental impact - additional indicators (EN 15804+A2)

PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
PM	disease inc.	1,12E-05	4,30E-06	9,81E-08	2,64E-07	4,27E-08	2,14E-07	NE
IRP	kBq U-235 eq	4,70E+00	3,98E+00	2,02E-02	2,93E-01	6,53E-01	5,28E-02	NE
ETP	CTUe	9,60E+03	3,64E+02	1,56E+00	2,59E+01	2,76E+01	2,38E+02	NE
HTPC	CTUh	8,90E-08	4,75E-09	2,01E-11	3,21E-10	6,16E-10	1,24E-08	NE
HTPNC	CTUh	2,26E-06	5,69E-07	1,59E-09	3,56E-08	2,85E-08	5,17E-07	NE
SQP	Pt	1,00E+04	2,49E+00	1,48E-02	1,83E-01	1,44E+01	6,00E+00	NE
Acronyms	PM: Potential incidence of disease due to pm emissions IRP Potential human exposure efficiency in relation to U235. ETP: Ecosystem Comparative Potential Toxic Potential Unit. HTPC: Potential human comparative toxic unit. HTPNC: Toxic Unit comparative potential for humans. SQP: Soil Quality Potential Index NE: Not Assessed -							

6. Additional environmental information

By the nature of its components, the board contains biogenic carbon in both its raw material (paperboard) and its packaging (paperboard). The biogenic carbon content embedded in both the board and its packaging is shown below.

Biogenic carbon content	Unit	Declared quantity
Biogenic carbon Content of the product	kg C	397 (Class C) 385 (Class B)
Biogenic carbon content in the package	kg C	1,11

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

Table 7. Biogenic carbon content statement



7 References

- UNE-EN 15804:2012+A2:2020. Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.
- ISO 14025:2006. Environmental labels and declarations— Type III environmental declarations — Principles and procedures.
- ISO 14040:2006 – “Environmental management – Life cycle assessment –Principles and framework”.
- ISO 14044:2006 – “Environmental management – Life cycle assessment – Requirements and guidelines”.
- Ecoinvent 3.8 Cut-Off, allocation cut-off. 2021. [https:// v38.ecoquery.ecoinvent.org/Home/Index](https://v38.ecoquery.ecoinvent.org/Home/Index)
- EcoIntelligentGrowth (2023). Informe ACV Honext. Revisión 20230328

AENOR



A verified environmental declaration

GlobalEPD