Environmental Product Declaration

According to ISO 14025 / ISO 14040-44
for the manufacture service of:

Car Interior
Bamboo Biosourced Fabric

GlobalEPD
A VERIFIED ENVIRONMENTAL DECLARATION
GlobalEPD-IntEPD S-P- 02412

EPD registration number S-P-02412
Programme The International EPD® System
Programme operator EPD International AB
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www.environdec.com

01. General information

- About the company
- Products

02. Environmental performance

- LCA
- Additional information
- Verification

content

GRUPO ANTOLIN INGENIERÍA, S.A. has the sole ownership, liability and responsibility of the EPD

An EPD should provide current information, and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

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

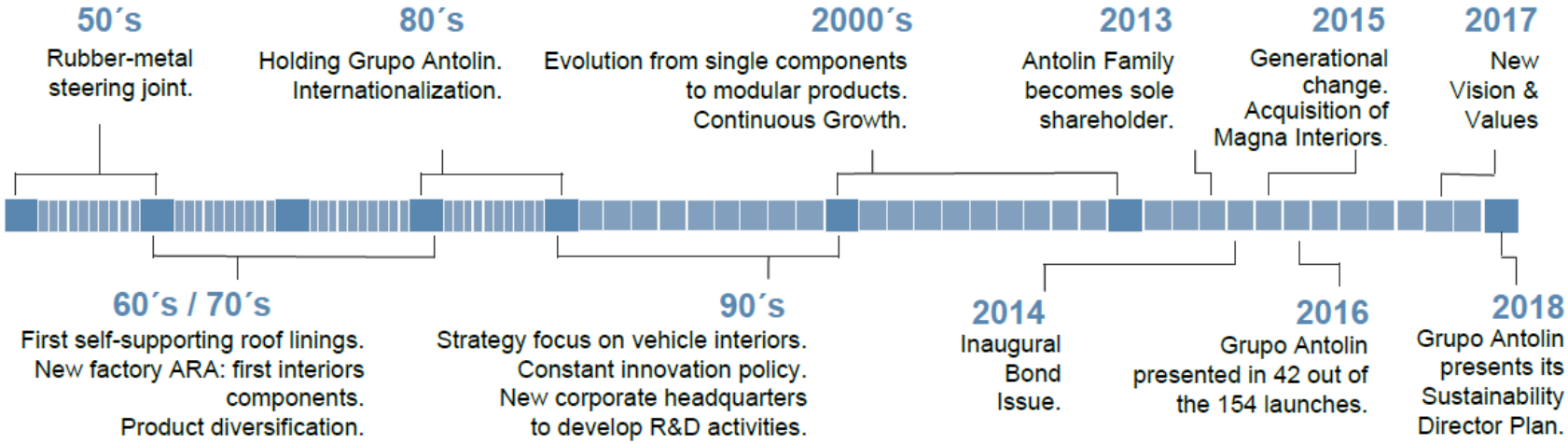
EPD®

01 General information

GRUPO ANTOLIN

One of the largest global car interior suppliers

Grupo Antolin is a family owned company fully committed with innovation and high quality



HISTORY

FROM A MECHANICS GARAGE TO A MULTINATIONAL COMPANY



Commitment to the future

High value added integrated products.

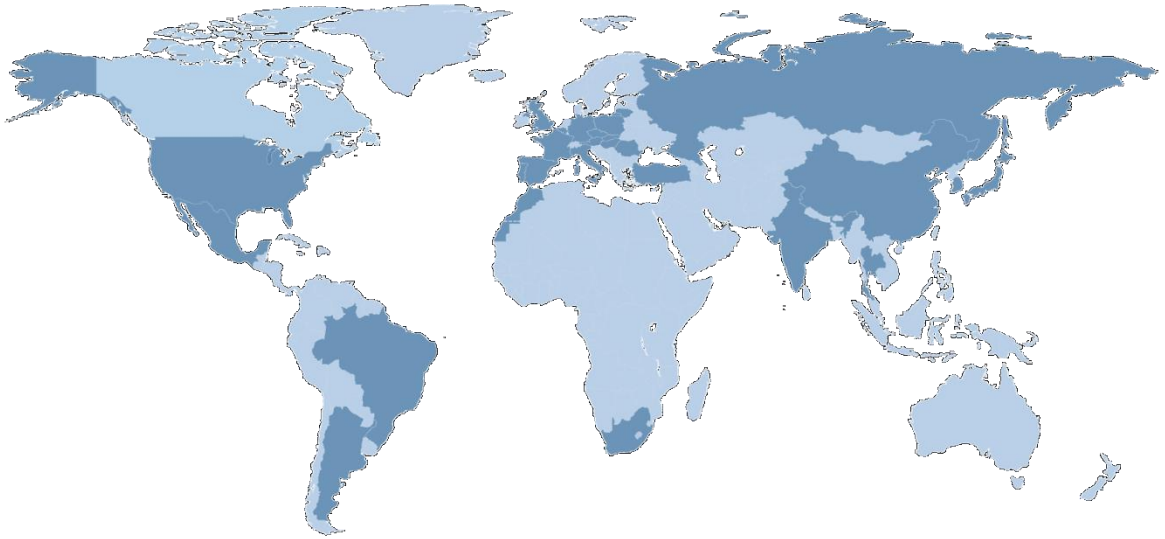
More than 65 years

of industrial tradition

company

We are where the cars are manufactured

More than 150 facilities and 25 Technical Commercial Offices



Grupo Antolin is present in 9 of the top 10 best selling cars in the world

25 Countries

- Spain
- Argentina
- Austria
- Brazil
- China
- Czech Republic
- France
- Germany
- Hungary
- India
- Italy
- Japan
- Mexico
- Morocco
- Poland
- Portugal
- Romania
- Russia
- Slovakia
- South Africa
- South Korea
- Thailand
- Turkey
- United Kingdom
- United States

Answers to a constantly changing world

Talent
More than 30,000 individuals drive us direct to success

Global Presence
155 production plants and centres Just in Time across 25 countries

Financial Strength
2018 annual sales of 5,425 million euros

Innovation
We innovate today to obtain a sustainable future for the automobile

BU
Overheads
Doors
Lighting
Cockpits

SUSTAINABILITY MASTER PLAN

PRIORITIES FOR ACTION

Our environmental strategy is based upon a systematic inclusion of the Environment in all of our processes.

We develop, manufacture and supply products with high added value with a lower impact on both the environment and our costs, so as to improve our competitiveness in the sector.

TARGET

Demonstrate our environmental commitment by devoting time, effort and resources to waste management, consumption, efficiency and energy management and social awareness.

LINES OF ACTION

- ❑ Innovation process (reducing weight, biomaterials, natural fibers, etc.)
- ❑ Design of new products and manufacturing processes that efficiently use resources and energy.
- ❑ Search for recycling options for components at the end of their useful life.

FUTURE

Formalize our sustainable positioning in environmental aspects

- ❑ Strategy and promotion of the circular economy.
- ❑ Transition to a low-carbon economy.
- ❑ Sustainable partnerships to promote sustainability.
- ❑ Sustainable Finance Strategy.

We are a proud member of the UN Global Compact, a voluntary initiative to implement universal sustainability principles

AENOR has issued an IQNet recognized certificate that the organization:

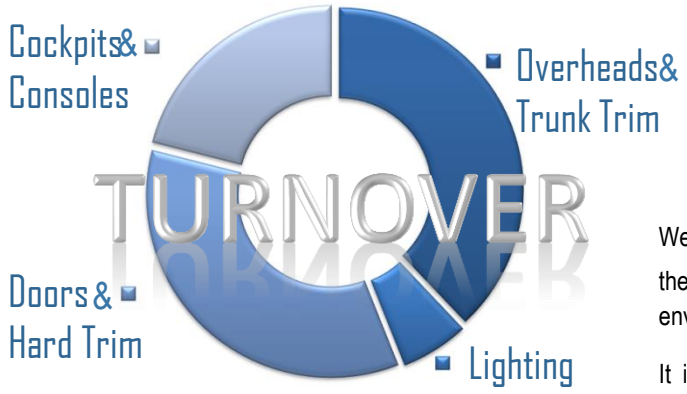
GRUPO ANTOLIN INGENIERÍA, S.A.

has implemented and maintains a Environmental Management System which fulfills the requirements of the following standard ISO 14001:2015 with Registration Number ES-2000/0237 – 002/00

First issued on: 2014-06-23

GA-2000/0237 - 002/00

company



EPD®

We manufacture products that are technologically sustainable, based on two premises: light and green, thereby contributing to lower CO_2 emissions. This is our way of making a commitment to the environment and to our clients.

It is present on the inside of the world's best-selling cars, providing the interior equipment for more than 500 different models.

Overheads& Trunk Trim BU

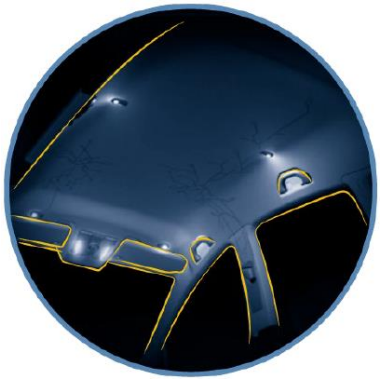
- Modular headliner
- Substrate
- Sunvisors
- Lighted headliner
- Trunk trim

Number 1 Worldwide

Doors& Hard Trim BU

- Carrier solutions
- Door panels
- Window regulators
- Mechanisms

Multi-Technological Offer



Lighting BU

- Complete solutions
- Interior:
  Functional
  Mood lighting
- Exterior

Leading ambient lighting supplier

Cockpits& Consoles BU

- Cockpits
- Instrument panels
- Central console

We Improve Life on Boar-

products

GRUPO ANTOLIN

Business Model and Suppliers network

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	CONCEPTION	DESIGN	VALIDATION	MANUFACTURING	DELYVERY
what	An innovative solution for the needs and expectations of our customers and their consumers	Definition of the product and service according to the requirements of the customer	Acceptance by the customer and the company responsible for production and supplier nomination	Start of the mass production of the product	Sequenced supply of the end product to the customer
how	• Pro-activeness • Innovation • Differentiation • Safety • Comfort • Ecological performance • Smart interiors Connectivity	• Weight reduction • Recyclability of materials and processes • Biomaterials • Computerized simulation • Reliability • Sturdiness • Products with added value	• Optimization of costs • Integration of the supply chain • Project management	• Standardization • Industrial flexibility • Minimal industrial investment • Energy efficiency • Industrial capacity	• Proximity of supply to the customer • Internationalization • Just in time • Resistant specialization • Profitability • Global platforms • Presence in all segments

We dominate Complete Product Cycle:

- conception,
- validation,
- industrial process,
- assembly
- sequenced delivery of the product.

The development of a powerful and sustainable supplier network is one of the foundations for maintaining the growth and development of our company in the long term. The development of the supply chain, an essential part of the transformation process being experienced by Grupo Antolin, involves the effective integration of sustainability throughout the entire value chain. This allows us to build our competitive advantage in the market and respond to our customers, managing any potential risks and turning them into opportunities. The sustainability of the supply chain is considered an essential differentiation factor and this is extended to the entire supply chain through implementation of the guidelines for the Sustainability Master Plan.

Together with the identification of strategic suppliers for cooperative relationships and mutual growth, one of the main challenges we face is the early identification of risks in the supply chain.

We therefore use various sources to carry out continuous monitoring that allows us to identify any incidents (geopolitical, financial, natural disaster, etc.), in order to avoid these affecting the chain and ensure that they do not endanger the supply to our customers.

Grupo Antolin is in continuous dialogue with its stakeholders and through this transparent outlook we promote the conviction that automotive sustainability contributes to the creation of value for all of us.

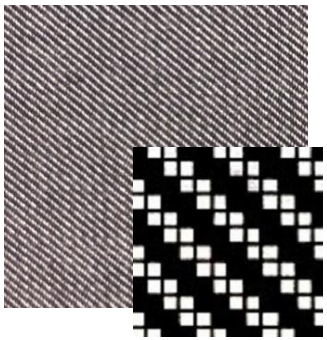
02 Environmental performance

Car Interior Bamboo Biosourced Fabric

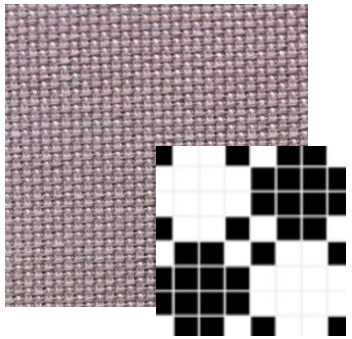
The product covered by this declaration is "Bamboo Fabric", intended as a semi-processed product by the textile industry, ready to be used as an automotive interior trim for the next transformation phases by the various ANTOLIN GROPUP manufacturing industries.

As "finished product" varies considerably in the car interior: door panel, cockpits, overheads, seats, etc.

Sarga beige bamboo
Young line



Radial beige bamboo
Redifined Rustic line



Esterilla black bamboo
Futurist line

declared product

eBu

The product identification, according to the Central Product Classification, is enclosed by:

- CPC 8821 Textile manufacturing services
- CPC 265 Woven fabrics (except special fabrics) of natural fibres other than cotton

description

Origine biosourced material

Noble Perception and natural look

Fresh feeling and soft touch

Young and dynamic fabric

Large mechanical properties (techincal test)

Antifungal et antibacterial properties

Antistatic properties

Target Application: Car interior

content

MATERIALS/CHEMICAL SUBSTANCES	UNIT
Bamboo fibres	50%
Cellulose fibres	50%
Synthetic fibres	0%
Volatiles	< 5,0 g/m^2

During the life cycle of the product any hazardous substances listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has been used in a percentage higher than 0,1% of the weight of the product.

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technical properties

PROPERTIES (TEST)	RESULT
Weight (ISO 3801)	290 (± 5 %) g/m^2
Thickness (ISO 5084)	0,4-0,5 mm
Smell (ISO 12219-7)	Odour ≤ 2.5 / Dominant ≤ 1.5
Fogging (ISO 6452)	F ≥ 85%
Volatility (ISO 12219)	< 35 g/m^2
Flammability (ISO 6941)	≤ 100 mm/m^2
Resistance Martindale (ISO 12947)	≥ 4
Resistance to water stain/water (ISO 23232)	≥ 5
Colour resistance to light Xenotest (ISO 105- B02)	≥ 5
Colorfastness to rubbing (ISO 105-X12)	≥ 5
Resistance to microorganisms (ISO 22612)	No notice any bad odor or fermentation
Antibacterial behaviour (ISO 20743)	A < 2
Antistatic behaviour (EN 1149-3)	S > 0,2 t_{50} < 4 s

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declared product

Life Cycle Assessment

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goal

The goal of the LCA study is to calculate environmental impact values for Car Interior Bamboo Biosourced Fabric collection to create an Environmental Product Declaration, under EPD®System.

scope

The LCA is according to ISO 14044, the requirements stated in the General Program Instructions by The International EPD® System, and the Product Category Rules Textile manufacturing services, non-apparel fabrics made of natural fibres other than cotton.
The scope of this study is attributional "cradle to gate" LCA also supported the concept of modularity and includes all processes up until the fabric is finished to be used at automotive interior trim, covering of at least 99% of energy, mass, and overall environmental relevance of the flows.
CML 3.05 as impact assessment methods and the methodological choices for allocation for reuse, recycling and recovery have been set according to the polluter pays principle.

declared unit

This cradle to gate Environmental Product Declaration is valid for a declared unit of 1 m^2 of Biosourced Bamboo Fabric of 260 – 570 g/cm^2 to be use as car interior trim.

inventory

The Life Cycle Inventory (LCI) data were collected through literature review (upstream) and specific data were taken directly from the production sites for the year 2018 (core). Secondary data were taken from the Ecoinvent v.3.5 database.

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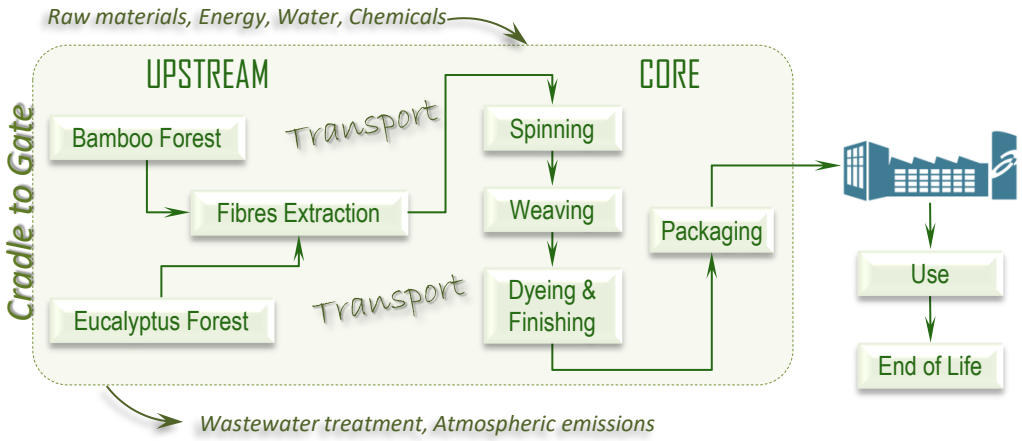
boundaries



eBú Fabric is produced in a Group Antolin's business partner factories (see suppliers).
Specifically, the boundaries are of a "cradle to gate" type, therefore from raw material extraction to packaging of semi-processed product to deliver to Antolin facilities, omitting the downstream processes: distribution, montage, usage stage and end-of-life.
Excluded: Manufacturing of production equipment, buildings and other capital goods; Personal activities as well as the contribution of business travel.

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potential environmental impact

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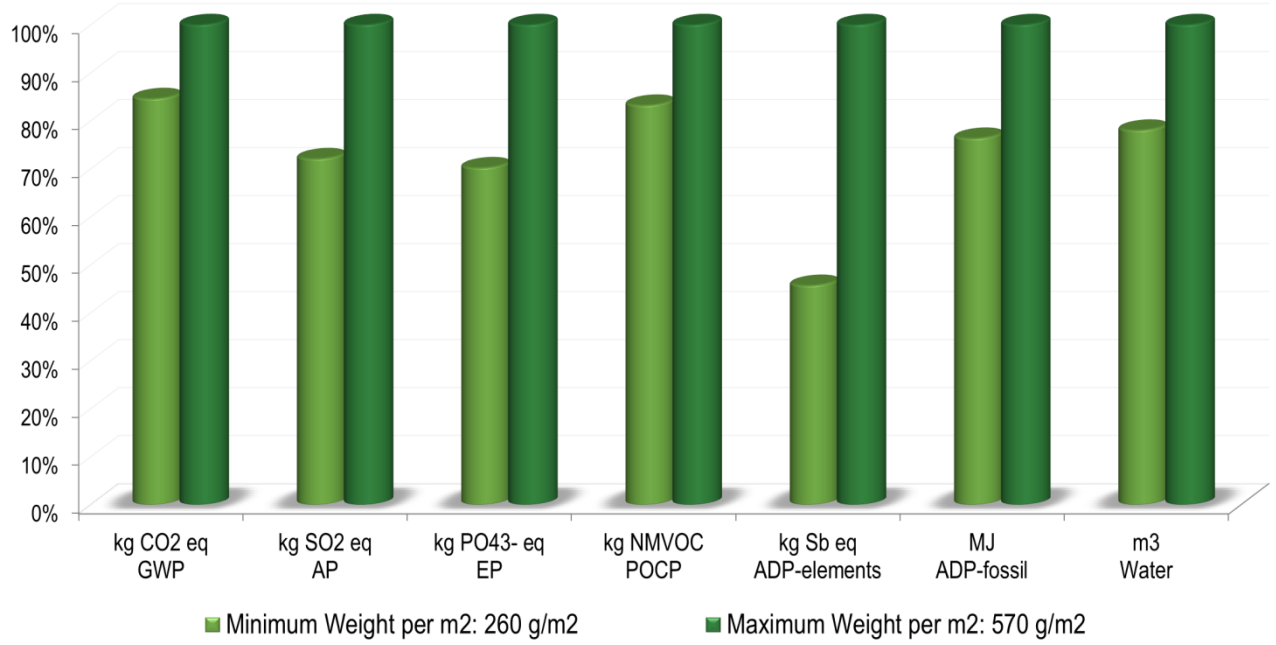
impact category*	upstream		core		total	
	260 g/m²	570 g/m²	260 g/m²	570 g/m²	260 g/m²	570 g/m²
GWP (kg CO_2 eq.)	2,39 E-01	5,23 E-01	1,32 E+00	1,32 E+00	1,56 E+00	1,85 E+00
Fossil (kg CO_2 eq.)	2,38 E-01	5,22 E-01	1,32 E+00	1,32 E+00	1,56 E+00	1,84 E+00
Biogenic (kg CO_2 eq.)	2,64 E-01	5,78 E-01	4,12 E-02	4,12 E-02	3,05 E-01	6,20 E-01
Land use (kg CO_2 eq.)	6,51 E-03	1,43 E-02	2,00 E-03	2,00 E-03	8,51 E-03	1,63 E-02
AP (Kg SO_2 eq.)	3,07 E-03	6,74 E-03	6,38 E-03	6,38 E-03	9,47 E-03	1,31 E-02
EP (Kg PO_4^{3-} eq.)	3,83 E-04	8,39 E-04	6,91 E-04	6,91 E-04	1,07 E-03	1,53 E-03
POCP (kg NMVOC eq.)	7,73 E-04	1,70 E-03	3,79 E-03	3,79 E-03	4,57 E-03	4,49 E-03
ADP Elements. (Kg Sb eq)	2,86 E-03	6,27 E-03	5,33 E-06	5,33 E-06	2,87 E-03	6,28 E-03
ADP Fossil fuels. (MJ)	6,92 E+00	1,52 E+01	1,97 E+01	1,97 E+01	2,66 E+01	3,48 E+01
WSP (m^3 eq)	2,89 E-01	6,34 E-01	9,33 E-01	9,33 E-01	1,22 E+00	1,57 E+00

for declared unit , 1 m² of Biosourced Bamboo Fabric of 260 – 570 g/cm² to be use as car interior trim

eBu

environmental performance



* GWP. Global warming potential
AP. Acidification potential
EP. Eutrophication potential
POCP. Formation potential of tropospheric ozone
ADP. Abiotic depletion potential
WSP. Water scarcity potential

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Bamboo Biosourced Fabric

EPD®

environmental performance

use of resources

parameter	upstream		core		total	
	260 g/m²	570 g/m²	260 g/m²	570 g/m²	260 g/m²	570 g/m²
Primary energy resources – Renewable						
as energy carrier (MJ, net calorific)	2,83E-02	6,20E-02	5,23E-01	5,23E-01	5,52E-01	5,85E-01
as raw materials (MJ, net calorific)	1,05E-01	2,30E-01	3,71E-01	3,71E-01	4,76E-01	6,01E-01
TOTAL (MJ, net calorific)	**1,33E-01**	**2,92E-01**	**8,95E-01**	**8,94E-01**	**1,03E+00**	**1,19E+00**
Primary energy resources - Non Renewable						
as energy carrier (MJ, net calorific)	1,10E+00	2,42E+00	2,77E+01	2,77E+01	2,88E+01	3,01E+01
as raw materials (MJ, net calorific)	3,69E-03	8,08E-03	1,19E-01	1,19E-01	1,22E-01	1,27E-01
TOTAL (MJ, net calorific)	**1,11E+00**	**2,43E+00**	**2,78E+01**	**2,78E+01**	**2,89E+01**	**3,02E+01**
Secondary material (kg)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels (MJ, net calorific)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non Renewable secondary fuels (MJ, net calorific)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water	2,89E-01	6,34E-01	1,09E+00	1,09E+00	1,38E+00	1,73E+00

eBu

output flows

flows	upstream		core		total	
	260 g/m²	570 g/m²	260 g/m²	570 g/m²	260 g/m²	570 g/m²
Components for reuse (kg)	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Material for recycling (kg)	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Materials for energy recovery (kg)	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Exported energy, electricity (MJ)	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Exported energy, thermal (MJ)	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

waste

waste	upstream		core		total	
	260 g/m²	570 g/m²	260 g/m²	570 g/m²	260 g/m²	570 g/m²
Hazardous waste disposed (kg)	6,12 E-07	1,34 E-06	2,35 E-05	2,35 E-05	2,41 E-05	2,49 E-05
Non-hazardous waste disposed (kg)	3,65 E-06	7,99 E-06	1,15 E-01	1,15 E-01	1,15 E-01	1,15 E-01
Radioactive waste disposed (kg)	5,80 E-06	1,27 E-05	1,05 E-04	1,05 E-04	1,11 E-04	1,18 E-04

for declared unit , 1 m² of Biosourced Bamboo Fabric of 260 – 570 g/cm² to be use as car interior trim

GRUPO ANTOLIN

03 Additional Information

Car Interior Bamboo Biosourced Fabric

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Bamboo is highly versatile. An important advantage of bamboo is its yield of land due to the high growing speed. It is a fast growing crop which is not heavily reliant on pesticides . It also improves soil quality due to its extensive root system. It provides approximately 35% more oxygen and absorbs 35% more carbon dioxide as compared to trees (Waite 2009, Atenda 2015), which results in a substantial improvement in the air quality.

In addition to its potential carbon sequestration benefits, bamboo provides several opportunities for landscape restoration due to its fast growth, potential for soil binding and erosion control, ability to grow on degraded and marginal soils, nutrient and water conservation on land and provision of a continuous and permanent canopy (Mischra et al. 2014, Rebelo and Buckingham 2015). Unlike most other natural plant-based fibres, bamboo does not require replanting as its root system is able to produce new shoots continually (Waite 2009).

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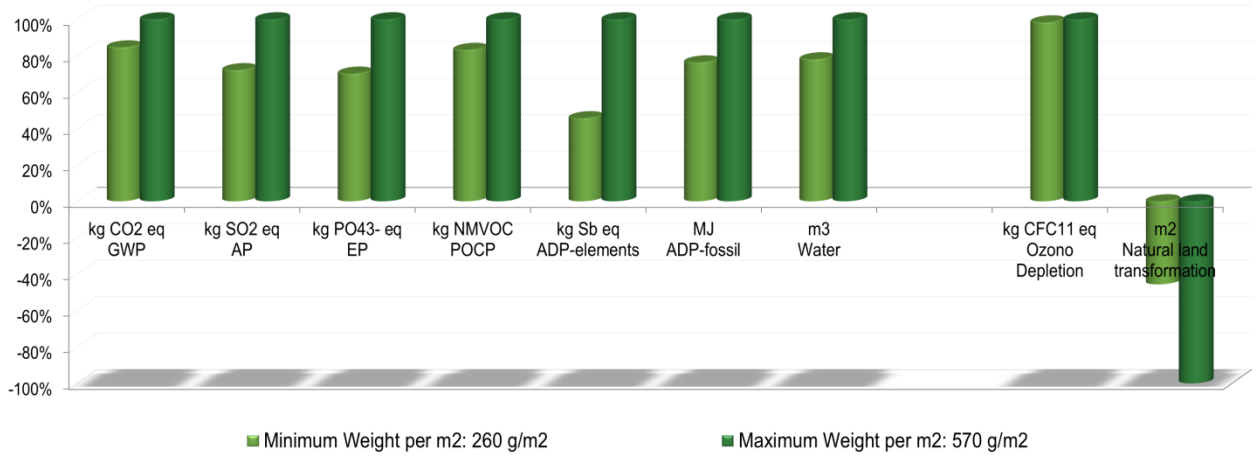
100% Natural and renewable origin

other environmental indicators

impact category	upstream		core		total	
	260 g/m²	570 g/m²	260 g/m²	570 g/m²	260 g/m²	570 g/m²
Ozone depletion potential (kg CFC11 eq.)	2,75 E-08	6,02 E-08	1,89 E-06	1,89 E-06	1,91 E-06	1,95 E-06
Natural Land Transformation (m²)	-2,16 E-01	-4,73 E-01	1,53 E-05	1,53 E-05	-2,16 E-01	-4,73 E-01

for declared unit , 1 m² of Biosourced Bamboo Fabric of 260 – 570 g/cm² to be use as car interior trim



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GRUPO ANTOLIN

Additional Information

EPD owner

LCA author

Programme

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EPD registration	*S-P-02412*
Published	*2020-12-14*
Valid until	*2025-12-13*
EPD type	*Cardle to factory gate*
Geographical scope	*Production scope: Spain* *Application scope: Global*
Reference year of data	*2018*

Product category rules (PCR)

PCR 2020:04 Textile manufacturing services, non-apparel fabrics made of natural fibres other than cotton.

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

☐ EPD Process certification ☑ EPD Verification

Third party verifier:

MARCEL GÓMEZ consultoría ambiental

Marcel Gómez (info@marcelgomez.com)

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

references

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