

EPD_Environmental Product Declaration



BEND 10 WITHOUT BACKREST

Ref_F218M19

Report Data 12.07.2017

Certificates

ISO 9001:2008

ISO 14001:2004

ISO 14006. Ecodesign

PEFC. Programme for the Endorsement of Forest Certification

FSC. Forest Stewardship Council

GBCe. Green Building Council Spain



1. Details of the system

Type New Product ☒ Redesign ☐ Studied Year 2017

Declaration Scope: From extraction of raw materials to complete desk solution, including end of life.
The detail of each of the phases considered and its scope is included below

Materials	Production	Transport	Use	End of life
Including the extraction and processing of raw materials and component sourcing to its delivery at the Actiu Technological Park.	Consider the production and assembly processes used in Actiu.	Consider the production and assembly processes of Actiu	This stage has no environmental relevance for the life cycle analysis. It is estimated a product durability of 15 years, although in fact can last longer.	Any product can be disposed of in different ways, or become a resource. Drawing on national average dates, it is supposed that aluminium, wood and cardboard packaging is recycled, while the rest is treated as urban waste.

2. RAW MATERIALS USED FOR THE PRODUCT. Product specifications, including packaging

	KG of product solution	Percentage %	Quality of finishes	
			Production of raw materials	Processed
Cloth	1,161	10,44%	Bibliographic data	Bibliographic data
Steel (SIMAPRO HAI)	2,002	18,00%	Bibliographic data	Bibliographic data
Carton	3,401	30,58%	Bibliographic data	Bibliographic data
Foam	4,535	40,78%	Bibliographic data	Bibliographic data
TOTAL	11,099	99,81%		
% recycled materials		38,33%		
% recyclable materials		59,03%		

ACTIU product design is made to facilitate the separation of its components and recycling.

The product is designed to help companies LEED® certification. You can obtain LEED® credits with our product. On the one hand, contains a high percentage of recycled materials and is manufactured with low emissions to the atmosphere. On the other hand, has been designed with ergonomic standards. Finally, it can be easily recycled because it is designed for disassembly and identification of very simple components. This will help you achieve LEED® credits for employee health and innovation

The verification process life cycle analysis is performed by independent experts in Ecodesign (Consultant Business Area) and using the criteria of the standard ISO 14006 "Ecodesign".

This product has been manufactures at the facilities of e ACTIU BERBEGAL Y FORMAS, S.A.

www.actiu.com

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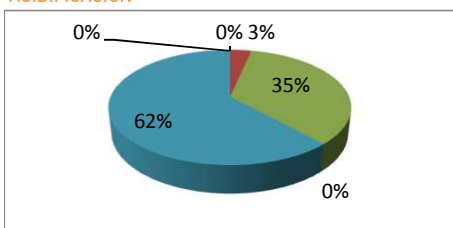
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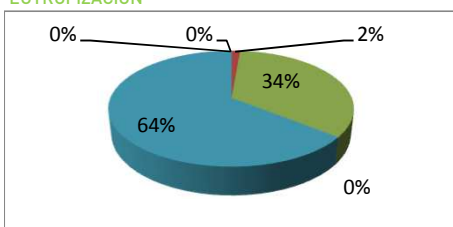
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3. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

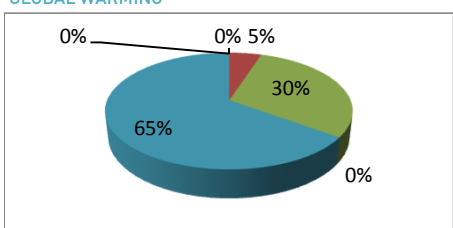
Impact category	Substance	Unit	Total
ACIDIFICACION	Remaining Substances	kg SO2 eq	0
	Ammonia	kg SO2 eq	0,010981288
	Nitrogen dioxide	kg SO2 eq	0,112781012
	Nitrogen oxides	kg SO2 eq	0
	Sulfur dioxide	kg SO2 eq	0,200615978
	Sulfur oxides	kg SO2 eq	2,937E-258
	TOTAL	kg SO2 eq	0,023470485



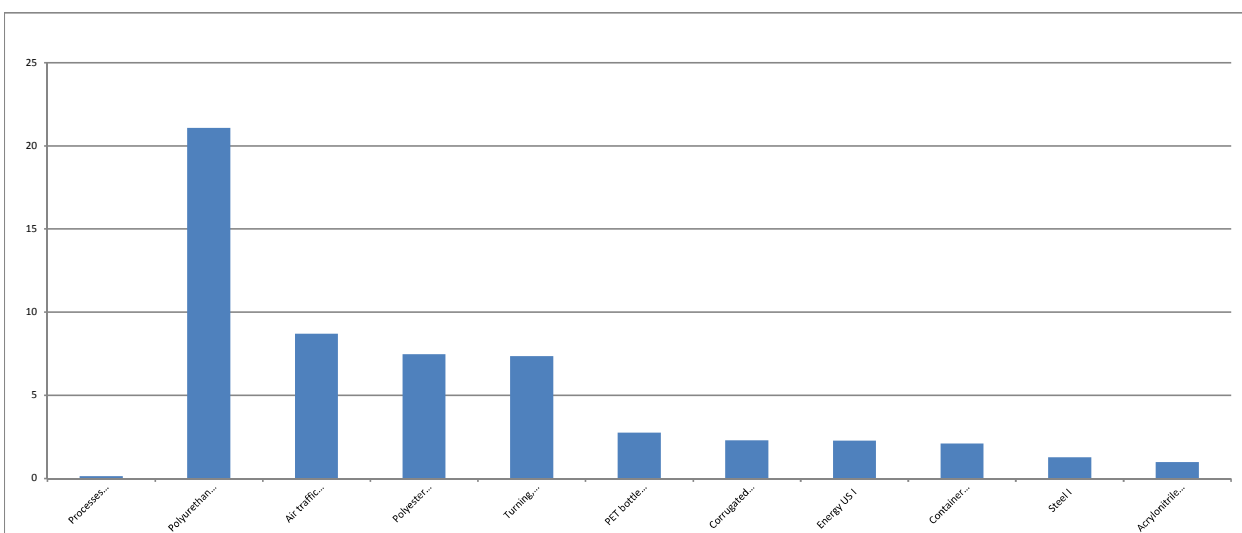
Impact category	Substance	Unit	Total
EUTROFIZACION	Remaining Substances	kg PO4--- eq	0
	Ammonia	kg PO4--- eq	0,000688836
	Nitrogen dioxide	kg PO4--- eq	0,017520094
	Nitrogen oxides	kg PO4--- eq	0
	Ammonium, ion	kg PO4--- eq	0,032819873
	COD, Chemical Oxygen Demand	kg PO4--- eq	2,937E-258
	TOTAL	kg SO2 eq	0,005167787



Impact category	Substance	Unit	Total
GLOBAL WARMING	Remaining Substances	kg CO2 eq	0
	Carbon dioxide	kg CO2 eq	2,588701909
	Carbon dioxide, fossil	kg CO2 eq	15,54121416
	Carbon monoxide	kg CO2 eq	0
	Carbon monoxide, fossil	kg CO2 eq	33,58357909
	Dinitrogen monoxide	kg CO2 eq	2,937E-258
	TOTAL	kg CO2 eq	7,356504987



Impact of group elements (materials, processes, energy, use, transport and waste)



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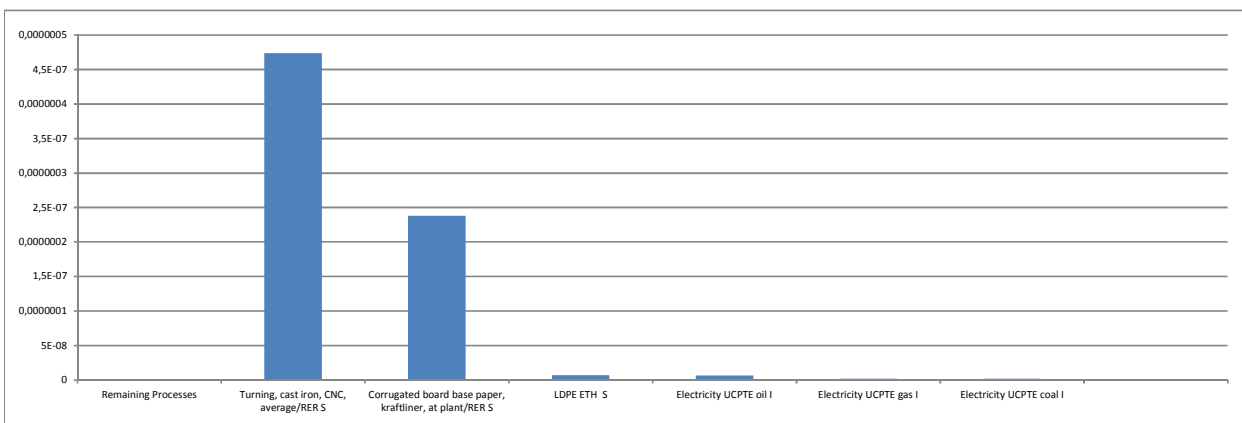
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4. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

Impact category	Substance	Unit	Total
REDUCING OZONE	Remaining Substances	kg CFC-11 eq	0
	Methane, bromochlorodifluoro-, Halon 1211	kg CFC-11 eq	1,11088E-08
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	2,38575E-07
	Methane, chlorodifluoro-, HCFC-22	kg CFC-11 eq	0
	Methane, tetrachloro-, CFC-10	kg CFC-11 eq	7,62586E-09
	TOTAL	kg SO2 eq	4,7368E-07

Impact of group elements (materials, processes, energy, use, transport and waste)



Impact category	Substance	Unit	Total
PHOTOCHEMICAL SMOG	Remaining Substances	kg C2H4 eq	0
	Carbon monoxide	kg C2H4 eq	0,000686456
	Carbon monoxide, fossil	kg C2H4 eq	0,01426752
	Hydrocarbons, unspecified	kg C2H4 eq	0
	Methane	kg C2H4 eq	0,04034999
	Methane, fossil	kg C2H4 eq	2,937E-258
	TOTAL	kg SO2 eq	0,00469225

Impact category	Substance	Unit	Total
NON-RENEWABLE RESOURCES	Substancias remanentes	MJ eq	0
	Coal, 18 MJ per kg, in ground	MJ eq	33,74345972
	Coal, 29.3 MJ per kg, in ground	MJ eq	219,3980115
	Coal, brown, in ground	MJ eq	0
	Coal, hard, unspecified, in ground	MJ eq	593,1185125
	Energy, from coal	MJ eq	2,937E-258
	TOTAL	kg SO2 eq	114,9797797

WASTE	Total NO HAZARDOUS	KG	2,64
	Total HAZARDOUS	KG	0,283

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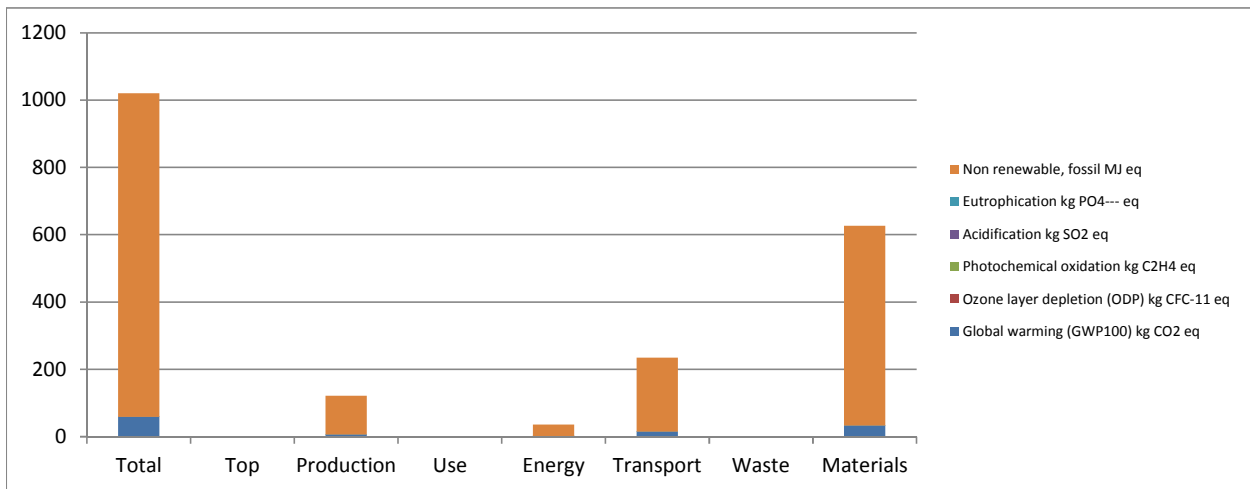
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5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Category	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	59,07000015	0	7,356504987	0	2,588701909	15,54	0	33,58
Ozone layer depletion (ODP)	kg CFC-11 eq	7,3099E-07	0	4,7368E-07	0	1,11088E-08	2E-07	0	8E-09
Photochemical oxidation	kg C2H4 eq	0,059996217	0	0,00469225	0	0,000686456	0,014	0	0,04
Acidification	kg SO2 eq	0,347848763	0	0,023470485	0	0,010981288	0,113	0	0,201
Eutrophication	kg PO4--- eq	0,05619659	0	0,005167787	0	0,000688836	0,018	0	0,033
Non renewable, fossil	MJ eq	961,2397634	0	114,9797797	0	33,74345972	219,4	0	593,1



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6. Ecodesign improvements considered.

ACTIU products are designed considering different environmental strategies. According to their level of complexity, the strategies used are classified into one of the following. Here are some of the choices for ecodesign significant product.

PRODUCT STRATEGY ECODESIGN	CHOICES
Low impact materials selection	Designed to be manufactured with 38,33% recycled materials
	100% recycled aluminium
	Powder paint with no VOC emissions
	Limitation on use of hazardous substances. Without chromium, mercury, cadmium
Optimization of product techniques	Recycled cardboard packaging
	Optimizing energy use throughout the production process
	Painting processes of high technology systems.
	Recovery unused paint in the process. Zero emissions of VOCs.
Optimization of distribution system	Automated manufacturing systems. Planning the cutting process.
	Closed water circuits. Heat recovery.
	Optimization of energy use in the manufacturing process: Heat recovery in the painting process, automated manufacturing systems for energy saving.
	Reducing energy. Removable systems. Low volume packaging. Spaces optimization.
Optimization of product life	Saving energy and Flexibility. Modular system adaptable between different models.
	15 years minimum life time
	Product is easy to maintain and clean. It can be easily cleaned with a damp cloth with water.
	The product is part of a modular program. Easy to modify, extend and repair to maximize its life time.
Optimization of the end of system life	Easy separation of product components
	High degree of recyclability of the product: 89%
	Packaging reuse system between ACTIU and its providers to avoid waste generation

Bibliography and references

ISO 14025 Environmental labels and declarations – Tipo III

ISO 14044:2006 "Environmental management. Life time cycle analysis. Requirements and guidelines "

UNE - EN ISO 14006:2011 "Environmental management systems. Guidelines to incorporate ecodesign "

Methods to calculate environmental impact

Base datos: ETH-ESU System processes, Ecoinvent system processes, IDEMAT, EDIP, IPCC, Ecological Scarcity 2006.